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\$AP 3637

Atty. Docket No. JOH26 P300

CERTIFICATE OF MAILING

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3/16/04  
Date

Debra L. Cooper  
Debra L. Cooper

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Art Unit : 3637  
Examiner : John P. Fitzgerald  
Appln. No. : Robert E. Johnson  
Applicant : 09/996,506  
Filing Date : November 28, 2001  
Confirmation No. : 3065  
For : HUNTING BLIND WITH FLIP-UP HOOD

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF  
(PATENT APPLICATION - 37 CFR §1.192)

1. Transmitted herewith, in triplicate, is the APPELLANT'S BRIEF in this application, with respect to the Notice of Appeal filed on February 18, 2004.

2. STATUS OF APPLICANTS

This application is on behalf of:

\_\_\_ other than a small entity.

x a small entity.

A verified statement:

\_\_\_ is attached.

x was already filed.

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 CFR §1.17(c), the fee for filing the Appeal Brief is:

x small entity \$160.00

\_\_\_ other than a small entity \$320.00

Appeal Brief fee due: \$160.00

Applicant : Robert E. Johnson  
Appln. No. : 09/996,506  
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4. **EXTENSION OF TERM**

The proceedings herein are for a patent application and the provisions of 37 CFR §1.136 apply.

*(complete (a) or (b), as applicable)*

(a) ☐ Applicant petitions for an extension of time under 37 CFR §1.136:

<u>Extension (months)</u>	<u>Fee for other than small entity</u>	<u>Fee for small entity</u>
<input type="checkbox"/> one month	\$110.00	\$55.00
<input type="checkbox"/> two months	\$400.00	\$200.00
<input type="checkbox"/> three months	\$920.00	\$460.00
<input type="checkbox"/> four months	\$1440.00	\$720.00

FEE: \$

If an additional extension of time is required, please consider this a petition therefor.

*(check and complete the next item, if applicable)*

☐ An extension for \_\_\_\_\_ months has already been secured, and the fee paid therefor of \$\_\_\_\_\_ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request: \$

*or*

(b) ☒ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

5. **TOTAL FEE DUE**

The total fee due is:

Appeal Brief fee: \$160.00

Extension fee (if any) \$

**TOTAL FEE DUE: \$160.00**

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**6. FEE PAYMENT**

- ☒ Attached is a check in the sum of \$160.00  
☐ Charge Account No. 16 2463 the sum of \$ \_\_\_\_\_.  
☒ A duplicate of this transmittal is attached.

**7. FEE DEFICIENCY**

- ☒ If any additional extension and/or fee is required, this is a request therefor  
and to charge Account No. 16 2463.

*and/or*

- ☒ If any additional fee for claims is required, charge Account No.  
16 2463.


Respectfully submitted,

ROBERT E. JOHNSON

By: Price, Heneveld, Cooper,  
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Date

Mar 16, '04

  
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Atty. Docket No. JOH26 P-300

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
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APPELLANT'S BRIEF (37 CFR §1.192)

This brief is in furtherance of the Notice of Appeal, filed in this case on February 18, 2004.

The filing of this brief is within the two-month period immediately following the filing of the Notice of Appeal, and therefore, no extension fee is due.

The fees required under §1.17(f), and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief is transmitted in triplicate. (37 CFR §1.192(a)).

This brief contains these items under the following headings, and in the order set forth below (37 CFR §1.192(c)):

- I. Real Party in Interest (37 CFR §1.192(c)(1))
- II. Related Appeals and Interferences (37 CFR §1.192(c)(2))
- III. Status of Claims (37 CFR §1.192(c)(3))
- IV. Status of Amendments (37 CFR §1.192(c)(4))
- V. Summary of Invention (37 CFR §1.192(c)(5))
- VI. Issues (37 CFR §1.192(c)(6))
- VII. Grouping of Claims (37 CFR §1.192(c)(7))
- VIII. Arguments (37 CFR §1.192(c)(8))
- IX. Conclusion

Appendix of Claims involved in the appeal (37 CFR §1.192(c)(9))

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- Issue 2: Whether claim 28 is anticipated under 35 USC §102(b) by Haines 4,813,442?
- Issue 3: Whether claims 1-3, 6-7, 11-12, 14-16 are unpatentable under 35 USC §103(a) over Radig 3,902,264?
- Issue 4: Whether claims 5 and 17 are unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Kanter 5,339,847 and Seaman 3,838,838?
- Issue 5: Whether claim 9 is unpatentable under 35 USC §103(a) over Haines 4,813,442 in view of Dubinsky 6,129,101?
- Issue 6: Whether claims 18-20 are unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Dubinsky 6,129,101?
- Issue 7: Whether claim 21 is unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Dubinsky 6,129,101 and Sayles 3,848,352?



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The final page of this brief bears the attorney's signature.

**I. Real Party in Interest**

The real party in interest in this application is the present inventor, Robert E. Johnson.

**II. Related Appeals and Interferences**

There are no related appeals or interferences pending under this application.

**III. Status of Claims**

Claims 1-3, 5-9, 11-12, 14-22, and 28 are pending in the present application. All claims are rejected and are the subject of this appeal. A final rejection was mailed November 18, 2003. A Notice of Appeal was filed on February 18, 2004. Attached in Appendix A2 is an Amendment Under §1.116, in which the dependency of claims 11 and 21 are corrected.

**IV. Status of Amendments**

An amendment was filed August 12, 2003 and was entered. A final rejection was issued and mailed November 18, 2003. An amendment under §1.116 is filed herewith, and has not yet been entered. The arguments in section VIII are made as if this Amendment under §1.116 was entered. However, very very similar arguments will apply even if the Amendment under § 1.116 is not entered.

**V. Summary of the Invention**

The claims on appeal focus on a hunting blind apparatus 10 (Fig. 1 and also see the specification, page 3, line 27 - page 4, line 13), the illustrated apparatus 10 being a duck and goose hunting blind. The apparatus 10 (Fig. 2) includes a base 11, a Z-shaped tubular upright frame 12 with radially-extending legs 30/36, a body-supporting member or seat 13, a top frame 14 and a hood frame 15 pivoted to the top frame 14. Hood material, such as camouflage material 15A or the like, covers the hood frame 15. A spring 62 (Fig. 3) is connected between

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a rear of the hood frame 15 and a lower portion of the top frame 14, and a cable 17 is connected between a front of the hood frame 15 and a slidable bearing latch 18 is mounted to a lower portion of the top frame 14 and is operably connected between the bearing 19 and a rear of the seat 13 by a trigger 75. The seat 13 is pivotally supported in front by a brace 67 that extends from the base 11.

Initially, a hunter hooks trigger 75 to latch the hood 15/15A in a closed position. (See Fig. 1, 1A, and 5.) When a hunter or photographer 8 sits on the seat 13 (Figs. 3 and 6), the latch 18 is released, but the weight of the hunter overcomes a force of the spring 62 and keeps the hood frame 15 from being pulled open. When ducks fly over, the hunter stands up (Figs. 4, 4A, and 7), causing the spring 62 to pull and pivot the hood frame rearwardly, resulting in the hood flying open rearwardly for an unobstructed gunshot. Specifically, as noted in the specification on page 4, line 7, "When a hunter 8 sits on the seat 13 (Figs. 3 and 6), the latch 18 is released, but the weight of the hunter overcomes a force of the spring 62 and keeps the hood frame 15 from being pulled open. When ducks fly over, the hunter stands up (Figs. 4, 4A, and 7), causing the spring 62 to pull and pivot the hood frame rearwardly, resulting in the hood flying open rearwardly for an unobstructed gunshot." The sequence of positions for a rear of the seat and the latch is shown in Fig. 5 (latched), Fig. 6 (unlatched by person sitting down), and Fig. 7 (seat raised and hood opened when the hunter stands).

#### **Va. Cited Prior Art**

Haines 4,813,442 discloses a collapsible protective structure where a pedal (20A) can be depressed to move an umbrella canopy (11) from a collapsed downward position around the structure's center post, to an expanded position where the canopy expands horizontally to cover the area underneath, effectively protecting the area under the canopy from falling objects. Haines does not disclose any latch, but instead discloses a pedal that is connected to the canopy for simultaneous movement. In its open position, the canopy in Haines expands to cover and protect people standing under it. When allowed to fall closed, the canopy (which is made of heavy material to deflect falling objects) swings downward from gravity, such that people must duck or move out of its way to avoid being struck by the canopy. The operation

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of the pedal mechanism is different than the structure claimed, since Haines discloses that it is intended to provide shelter from falling objects. Therefore, people will bunch close to its center port. For this same reason, and because a person must keep his weight on the pedal, there will not be seating positioned around and under the canopy, as discussed below.

Radig 3,902,264 discloses a blind for hunters, including a foot pedal that is depressible and that includes a linkage (122/118/116/112) and upper frame assembly (32) that swings opposing halves of a collapsible cover shroud (16) horizontally outwardly when the pedal is depressed. Radig discloses a release mechanism 94/100 (Fig. 2) but it does not disclose a latch as defined in the claims. Instead, the cover of Radig requires that the hunter step on the pedal to open the cover, which causes a distraction and balance problem to hunters at a critical time when they are trying to aim, as discussed below. Further, the structure of Radig is distinctly different than that presently claimed.

Sayles 3,848,352 discloses a hunter's blind, where a cover (10) is pivoted to a structure rearward of the hunter and is biased by rubber bands (40) so that when the cover is bumped by the hunter's head, the cover pops open. However, Sayles also does not disclose a latch as defined in the claims. Further, like Radig, Sayles causes an inconvenience and distraction to the hunter at a critical time when the hunter is trying to aim, as discussed below. Further, the structure of Sayles is distinctly different.

Dubinsky 6,129,101, Kanter 5,339,847, Seaman 3,838,838, and Clopton 4,788,997 do not supply the disclosure missing from the above-mentioned patents. Further, it is noted that Dubinsky discloses a ballast weight located totally within the tubular post disclosed in Dubinsky. Clopton discloses a lightweight portable blind that does not include a movable hood. Kanter and Seaman both disclose various leg configurations of interest but are not believed to render the claims unpatentable, nor are they analogous or relevant to the pending claims, as discussed below.

#### **Vb. The Examiner's Rejection**

1. Claims 1, 2, and 5-8 are anticipated under 35 USC §102(b) by Haines 4,813,442.
2. Claim 28 is anticipated under 35 USC §102(b) by Haines 4,813,442.

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3. Claims 1-3, 6-7, 11-12, 14-16 are unpatentable under 35 USC §103(a) over Radig 3,902,264.
4. Claims 5 and 17 are unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Kanter 5,339,847 and Seaman 3,838,838.
5. Claim 9 is unpatentable under 35 USC §103(a) over Haines 4,813,442 in view of Dubinsky 6,129,101.
6. Claims 18-20 are unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Dubinsky 6,129,101.
7. Claim 21 is unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Dubinsky 6,129,101 and Sayles 3,848,352.
8. Claim 22 is unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Clopton 4,788,997.

## **VI. Issues**

The issues are as follows:

- |          |  |
|----------|--|
| Issue 1: | Whether claims 1, 2, and 5-8 are anticipated under 35 USC §102(b) and/or obvious by Haines 4,813,442?                                |
| Issue 2: | Whether claim 28 is anticipated under 35 USC §102(b) And/or obvious by Haines 4,813,442?   |
| Issue 3: | Whether claims 1-3, 6-7, 11-12, 14-16 are unpatentable under 35 USC §103(a) over Radig 3,902,264?                                    |
| Issue 4: | Whether claims 5 and 17 are unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Kanter 5,339,847 and Seaman 3,838,838? |
| Issue 5: | Whether claim 9 is unpatentable under 35 USC §103(a) over Haines 4,813,442 in view of Dubinsky 6,129,101?                            |
| Issue 6: | Whether claims 18-20 are unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Dubinsky 6,129,101?                       |

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Issue 7: Whether claim 21 is unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Dubinsky 6,129,101 and Sayles 3,848,352?

Issue 8: Whether claim 22 is unpatentable under 35 USC §103(a) over Radig 3,902,264 in view of Clopton 4,788,997?

## **VII. Grouping of Claims**

The claims 1, 3, 6, 12, 14, and 16, stand or fall together.

Claims 18-20 stand or fall together.

The remaining claims 2, 5, 7, 8, 9, 11, 15, 17, 21, 22 and 28 each individually stand or fall alone. Each claim group and the individual claims listed above are believed to be separately patentable for reasons given in the arguments below.

## **VIII. Arguments**

### **Reasons for claim grouping and separate patentability:**

Independent claim 1 defines a covered apparatus including, among other things, a body-supporting member defining a seating area, a hood operably supported for movement between a hiding position and an open position, a link-and-bias mechanism for automatically moving the hood toward the open position when a person removes their weight from the body-supporting member, and a latch that secures the body-supporting member in a secured position against a force of the link-and-bias mechanism until the person places a portion of their body weight on the body-supporting member and being configured to automatically move to a released position when the person places their weight on the body-supporting member. Claim 1 is patentable for reasons noted below. Claim 1 defines a “body-supporting member defining a seating area”, which is significantly broader and therefore separately patentable from claims limited to a seat (see claims 2, 7, 18, 22, and 28). Also, there are other significant non-obvious differences, as discussed below.

Claim 18 defines a blind including, among other things, a cable extending at least in part through his tubular frame and that operably connects a hood to a latch. A “blind” is significantly

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different in scope from a “covered apparatus”, and further the limitation of the cable is significant, because a reliably-operating cable connection and system is not easily accomplished in a blind that is subject to harsh outdoor use. Also, claim 18 requires a tubular frame, which limitation is not found in claim 1, and which lends itself to a portable blind useful for outdoor activities. Thus, the combination of features in claim 18 is not found in and is patentably distinct from the remaining claims.

Claim 22 defines a blind including, among other things, a frame with an offset section connecting a top post to a bottom post. A “blind” is significantly different from a “covered apparatus”, and further the limitation of the offset section of a frame is significant, since a balanced stable seating arrangement is not easily accomplished in a blind where a hunter may sit for extended periods of time and where the blind is subject to harsh outdoor use. Also, claim 22 does not require that its latch be “automatically” releasable. Thus, the combination of features in claim 22 is not found in and is patentably distinct from the remaining claims.

Claim 28 defines a covered apparatus including, among other things, a link-and-bias mechanism operably connecting a seat to a hood so that a first position of the seat corresponds to a hiding position of the hood, and so that a second position of the seat corresponds to an open position of the hood, and where the link-and-bias mechanism provides a biasing force to automatically move the hood toward the open position when a hunter removes his weight from the seat, in combination with a reliable latch configured to secure the seat in the first position against the biasing force of the link-and-bias mechanism when the hunter is not placing a portion of his weight on the seat. Contrasting to claim 1, claim 28 requires a seat. Also, claim 28 does not require a particular frame. Therefore, claim 28 is sufficiently different in scope to justify separate patentability.

Dependent claims 5, 8, 9, 11, 15, 17, and 21 are separately patentable partly because of the difference between their base claims (see claim 1 for claims 5, 8, 9, 11, 15, 17; and see claim 18 for claim 21). Also, claims 5, 8, 9, 11, 15, 17, and 21 are separately patentable because the following concepts are not taught or suggested in the prior art, and further because of patentably different claim limitations, as discussed below.

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Issue 1: Whether claims 1, 2, and 5-8 are anticipated under  
35 USC §102(b) by Haines 4,813,442?

**Argument 1:** Detailed arguments are set forth below. Briefly summarized, the cited prior art does not anticipate the claims 1, 2, 5-8, nor render the claims unpatentable because, A) the cited art does not show or suggest elements or combinations of elements of the claimed inventions, B) there are insufficient reasons given by the Examiner to read the cited art as proposed, C) even if read as proposed by the Examiner, the cited art does not render the claimed inventions unpatentable because elements and/or features are lacking, and D) instead, the prior art teaches away from the combination of the present invention and teaches away from the combination proposed by the Examiner. (See MPEP 2131.)

In order to anticipate an invention as claimed, all elements must be found in a single reference, *Studiengesellschaft Kohl v Dart. Indus.*, 726 F2d 724 (Fed Cir, 1984). *Lindemann Maschinenfabrik GmbH v American Hoist & Derrick Co.* 730 F2d 1452 (Fed Cir 1984). Functional language in an apparatus claim requires that the anticipatory reference possess the capability of performing the recited function. *R.A.C.C. Industries Inc. V Stun-Tech Inc.*, 178 F3d 1309 (Fed Cir 1998) (*Intel Corp. v U.S. International Trade Comm*, 946 F2d 821, 832 (Fed Cir 1991). In order to render a claimed invention unpatentable, the art must reasonably teach or suggest the claimed invention. In other words, the claimed invention cannot be used as a template to piece together teachings of prior art. *In re Fritch*, 972 F2d 1260 (Fed. Cir. 1992). The opinion of *In re Fritch* adds “Mere fact that prior art may be modified to reflect features of claimed invention does not make modification and hence, claimed invention obvious unless desirability of such modification is suggested by the prior art”. (*Fritch, supra*, 1783) In particular, the MPEP §706.02(j) requires that three criteria must be met in order to establish a *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Fine*, 837 F2d 1071 (Fed Cir 1988). Second, there must be a reasonable expectation of success. *In re Merck & Co Inc*, 800 F2d 1091 (Fed Cir 1986). Third, the prior art reference (or references) must teach or suggest all the claim limitations. *In re Royka*, 490 F2d 981 (CCPA 1974).

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Claim 1 defines a covered apparatus including, among other things, a body-supporting member defining a seating area, a hood movable between a hiding position where the hood hides the seating area and an open position where the hood uncovers the seating area, “a link-and-bias mechanism operably connected to the hood to automatically move the hood toward the open position when a person removes their weight from the body-supporting member”, and a latch “moveable between a latched position where the latch secures the body-supporting member in a secured position against a force of the link-and-bias mechanism until the person places a portion of the person’s body weight on the body-supporting member, and configured to automatically move to a released position when the person places the portion of their body weight on the body-supporting member”. This claim clearly requires three positions. Position one is when the latch is latched and the hood is covering the seating area. Position two is when the latch is unlatched and the hood is still covering the seating area and weight is on the body-supporting member (i.e. a person sits on the seat which causes the latch to “automatically” release). Position three is when the hood is automatically swung open (i.e. the person stands up).

Haines 4,813,442 cannot anticipate claim 1 because it does not disclose a latch, nor anything equivalent to a latch. The item pointed out by the Examiner (item 22) is a spindle, and clearly is not a latch, as discussed below. Haines also does not disclose any item defining a seating area on his device. Instead, Haines discloses a structure where a person can stand under a heavy fabric to avoid falling objects, such as during a storm or earthquake. (See column 3, lines 8-13 and also see column 1, lines 19-27.) There is no suggestion in Haines that his device defines a seating area. In fact, it seems logical that anyone using the structure of Haines as Haines intended would stand as close to the center post 18/19 as possible ... and would not sit around the edges of his device where they could be hit by a falling object. Therefore, Haines teaches away from anything suggesting or defining a seating area, and certainly teaches away from modifying his apparatus in this manner.

The Office Action suggests that item 22 in Haines is a latch. However, item 22 is a “short spindle” that supports sleeve 18 and shaft 19 (column 2, lines 15-27). Clearly it is not a latch. The Office Action also suggests that a weight of the canopy in Haines is its bias mechanism. However, this is an unfair reading of Haines and/or an unfair reading of the claim 1. Notably,



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when reasonably read, claim 1 requires that the bias mechanism overcome a weight of the hood to operate the hood. Thus, the hood can't be the bias mechanism. Haines requires a person to press on a pedal to operate his canopy. This is exactly the problem that the present invention is intended to overcome.

In regard to the latch, possibly the Examiner is referring to the area around the spindle 22, and the fact that the sleeve 18 is movable to a lowered position when a person steps on the pedal 20A. However, the combination of components is clearly not a latch, nor would it make sense for it to be a latch. The umbrella-like structure of Haines is intended to spread its covering 11 when a person steps on the pedal 20A. It would never be latched down. When the weight of a person's foot is removed, the heavy covering 11 and supporting arms 13/14 are intended fall to a folded/closed condition. There is no teaching or suggestion in Haines to make a modification to include a latch. Further, it would require re-design not taught in Haines. Even if it were obvious to modify the structure of Haines to include a latch for holding its umbrella outwardly in a "covering" spread condition, this would be directly opposite the structure defined in claim 1, as discussed below.

Notably, Haines operates in a manner directly opposite the invention of claim 1. Haines spreads his umbrella-like covering to protect people from falling items when weight is put on his pedal 20a. Contrastingly, in claim 1, the hood stays put when a weight is applied (i.e. when a hunter sits). Thus, Haines teaches exactly away from the apparatus of claim 1 for this reason.

Further, even if it were obvious to a skilled artisan to add a latch to Haines (which Applicant specifically does NOT agree to), the cited art does not render the invention of claim 1 as unpatentable. Haines specifically teaches that his device is intended to be spread when a person presses on the pedal 20A. It is directly against the teaching of Haines to use a latch on his pedal when the umbrella covering is in a down position, because the device is intended to allow people to run to the device and "jump" on the pedal 20A in order to gain quick protection of the umbrella covering in Haines. Contrastingly, if a latch were added to Haines, it would be added to hold the "umbrella" in the spread position. If this were true, then the latch would not be "operably connected to the link-and-bias mechanism and to the body-supporting member" to automatically move to a release position when weight is applied, yet allowing the hood to remain

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open, as defined in claim 1.

The Examiner made the following statement: "Note: Functional recitation(s) using the words "for" have been given little patentable weight because they fail to add any structural limitations and thereby regarded as intended use language." (See the Office Action dated November 18, 2003, halfway down the page.) First, it is noted that "configured" is a structural recitation since it requires that the part (i.e. the "latch" in claim 1) be constructed and shaped a certain way. Thus, this recitation is "structural" and hence this language must be considered as such. The fact that the particular construction or shape is not specified in detail does NOT make this language functional. Applicant is not sure that the Examiner adequately considered this language in claim 1. The Examiner is invited to respond to this assertion. Second, even if considered functional, this language must be considered unless the cited reference is capable of performing the intended use. (Notably, the Examiner agreed with this in his Office Action.) (Also, there are cases that support that fact that functional language in an apparatus claim requires that the anticipatory reference possess the capability of performing the recited function. *R.A.C.C. Industries Inc. V Stun-Tech Inc.*, 178 F3d 1309 (Fed Cir 1998) (*Intel Corp. v U.S. International Trade Comm*, 946 F2d 821, 832 (Fed Cir 1991).) Haines is not capable of the function recited (if it is considered to be "functional").

Again, Applicant notes that Haines teaches directly away from the present invention, because weight activation of Haines causes the umbrella-like covering to spread to a position where it hides people and things underneath it.

Accordingly, claim 1 is allowable over Haines, and the Board is requested to reverse the Examiner's rejection of claim 1 over this art.

Claim 2 is patentable for all of the reasons given above in regard to claim 1, since claim 2 is dependent on claim 1. Further, claim 2 is more specific than claim 1 when claim 2 defines a seat. Claim 2 cannot be anticipated by Haines because of the additional reason that Haines does not disclose anything like a seat. Instead, Haines discloses a pedal for extending his umbrella-like covering. Haines is intended to be used to provide a shelter from falling objects, such as during a storm or earthquake. (See column 3, lines 8-13 and also see column 1, lines 19-27.) Thus, it seems logical that anyone using the structure of Haines in a way intended by Haines

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would stand as close to the center post 18/19 as possible ... and would not sit around the edges of his device where they could be hit by a falling object. Therefore, Haines teaches away from anything suggesting or defining a seat. To the extent that someone might interpret the pedal (20A) in Haines as being a seat or defining a seat (which we strongly disagree with), then it is even more clear that Haines does not include any latch (which we already argued above). Notably, the umbrella-like covering is disclosed in Haines as being heavy enough to deflect falling objects. Accordingly, it would appear to take more force on the pedal than a seated person could apply to the pedal. Haines therefore teaches away from a “seat” for this additional reason.

Claim 5 is patentable for all of the reasons given above in regard to claim 1, since claim 5 is dependent on claim 1. Further, claim 5 adds a base including radially extending legs. Claim 5 cannot be anticipated by Haines because Haines discloses a “platform base 21 (column 2, lines 15-16). Since Haines is intended for protecting people from falling objects, as discussed in Haines, column 3, lines 8-13 (and also see column 1, lines 19-27), it is unlikely that a platform base is simply a plurality of radially extending legs. At a minimum, Haines does NOT show radially extending legs. Therefore, Haines cannot anticipate claim 5. We further argue that Haines does not suggest the subject matter of claim 5 for all of the reasons given above in regard to claim 1, and further since Haines teaches a structure that must be sufficiently stable to remain upright in spite of falling objects. This teaches away from including radially extending legs.

Claim 7 is allowable for the same reasons given above for claim 1, and further claim 7 is allowable for the same reasons given above in regard to claim 2 since claim 7 defines a seat. It is noted that claim 7 is dependent on claim 6, such that it defines the seat in combination with the subject matter of claim 6, which requires a specific link mechanism connecting the body-supporting member (i.e. the seat) to the hood. Nothing in Radig discloses or suggests such an arrangement.

Claim 8 is patentable for all of the reasons given above in regard to claim 1, since claim 8 is dependent on base claim 1 (and intervening claim 6). Further, claim 8 cannot be anticipated by Haines because claim 8 requires a framework with tubular members defining an internal cavity and wherein the link mechanism includes a movable component located within the cavity of the

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framework ... which Haines does not disclose. Haines discloses a movable sleeve 18 that is positioned on an outside of a post 19. It is inherent that “outside” is not the same as “inside”. Notably, Haines requires that his movable sleeve 18 be positioned on an outside of his stationary post 19 so that the post 19 can be supported by stationary spindle 22, which holds the post 19 upright. Therefore, claim 8 cannot be anticipated by Haines. Further, claim 8 is not obvious over Haines for all of the reasons given above in regard to claim 1. Further, claim 8 is not obvious over Haines since Haines does not teach or disclose or suggest an internal cavity of his framework with a movable component located therein. Instead, the structure of Haines would require a considerable redesign in order to accommodate such a feature. Further, there is no reason or suggestion in Haines to do so. Contrastingly, in the harsh environment of the present structure, this feature is important. Thus, the Examiner has not and cannot meet his burden of a *prima facie* case through only Radig.

Accordingly, the Board is requested to reverse the Examiner’s rejection and to cause allowance of claims 1 and 6 (as a group) and claims 2, 5, 7, and 8 (individually).

Issue 2: Whether claim 28 is anticipated under 35 USC §102(b)  
By Haines 4,813,442?

Argument – Detailed arguments are set forth below. Briefly summarized, the cited prior art does not anticipate claim 28, nor render the claim 28 unpatentable because, A) the cited art does not show or suggest elements or combinations of elements of the claimed invention, B) there are insufficient reasons given by the Examiner to read the cited art as proposed, C) even if read as proposed by the Examiner, the cited art does not render the claimed inventions unpatentable because elements and/or features are lacking, and D) instead, the prior art teaches away from the combination of the present invention and teaches away from the combination proposed by the Examiner. (See MPEP 2131.)

The legal standard for anticipation and patentability were given above in regard to claim 1, and these standards will not be repeated.

Claim 28 defines a covered apparatus including, among other things, a seat defining a seating area, a hood movable between a hiding position where the hood hides the seat and an

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open position where the hood uncovers the seating area, “a link-and-bias mechanism operably connecting the seat to the hood so that the first position of the seat corresponds to the hiding position of the hood, and so that the second position of the seat corresponds to the open position of the hood, the link-and-bias mechanism providing a biasing force to automatically move the hood toward the open position when a hunter removes his weight from the seat; and a releasable latch configured to secure the seat in the first position against the biasing force of the link-and-bias mechanism when the hunter is not placing a portion of the person’s bodyweight on the seat”. This claim clearly requires three positions. Position one is when the latch secures the seat against the biasing force of the link-and-bias mechanism (i.e. the hood is covering the seating area). Position two is when the latch is released but the hood is still covering the seating area due to a weight of the person (i.e. a person is sitting on the seat). Position three is when the hood is automatically swung open (i.e. when the person stands up).

Haines 4,813,442 cannot anticipate claim 28 because it does not disclose a latch, nor anything equivalent to a latch. The item pointed out above, item 22 is a spindle, and clearly is not a latch. Haines also does not disclose any item defining a seating area on his device. Instead, Haines discloses a structure where a person can stand under a heavy fabric to avoid falling objects, such as during a storm or earthquake. (See column 3, lines 8-13 and also see column 1, lines 19-27.) As discussed above in regard to claim 1 (Issue #1), there is no suggestion in Haines that his device defines a seat, nor seating area. In fact, it seems logical that anyone using the structure of Haines as Haines intended would stand as close to the center post 18/19 as possible ... and would not sit around the edges of his device where they could be hit by a falling object. Therefore, Haines teaches away from anything suggesting or defining a seating area. Haines certainly would not include a seat in his device.

The Examiner suggests that item 22 in Haines is a latch. However, item 22 is a “short spindle” that supports sleeve 18 and shaft 19 (column 2, lines 15-27). Clearly it is not a latch.

Possibly the Examiner is referring to the area of spindle 22, and the fact that the sleeve 18 is movable to a lowered position when a person steps on the pedal 20A. However, the combination of components is clearly not a latch, nor would it make sense for it to be a latch. The umbrella-like structure of Haines is intended to spread its covering 11 when a person steps

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on the pedal 20A. When the weight of a person's foot is removed, the heavy covering 11 and supporting arms 13/14 are intended fall to a folded/closed condition. There is no teaching or suggestion in Haines to make a modification to include a latch. Further, it would require considerable re-design. Thus, it does not make sense to modify the structure of Haines to include a latch for holding its umbrella outwardly in a "covering" spread condition.

Further, even if it were obvious to a skilled artisan to add a latch to Haines (which Applicant specifically does NOT agree to), the cited art does not render the invention of claim 28 unpatentable. Haines specifically teaches that his device is intended to be spread when a person presses on the pedal 20A. It is directly against the teaching of Haines to use a latch on his pedal when the umbrella covering is in a down position, because the device is intended to allow people to run to the device and "jump" on the pedal 20A in order to gain quick protection of the umbrella covering. Contrastingly, if a latch were added to Haines to hold the "umbrella" in the spread position, then the latch would not be provided that is "configured to secure the seat in the first position against the biasing force of the link-and-bias mechanism", as defined in claim 28. It does not make any sense in Haines to modify his arrangement to allow both a latch and/or or a person's weight to keep the "umbrella-like" covering over a seating area.

The Examiner made the following statement: "Note: Functional recitation(s) using the words "for" have been given little patentable weight because they fail to add any structural limitations and thereby regarded as intended use language." (See the Office Action dated November 18, 2003, halfway down the page.) First, it is noted that "configured" is a structural recitation since it requires that the part (i.e. the "latch" in claim 28) be constructed or shaped a certain way. Thus, this recitation of the construction of the latch is structural must be considered. Applicant is not sure that the Examiner did adequately consider this language in claim 28. The Examiner is invited to respond to this assertion. Second, even if the language of concern is considered functional, this language must be considered unless the cited reference is capable of performing the intended use. (Notably, the Examiner agreed with this statement in his Office Action.) (Also, there are cases that support the fact that functional language in an apparatus claim requires that the anticipatory reference possess the capability of performing the recited function. *R.A.C.C. Industries, Inc. V Stun-Tech Inc.*, 178 F3d 1309 (Fed Cir 1998) (*Intel*

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*Corp. v U.S. International Trade Comm*, 946 F2d 821, 832 (Fed Cir 1991).) Haines does not teach a structure capable of the recited language, because the apparatus disclosed in Haines would be non-functional if it latched as defined in claim 28.

Again, Applicant notes that Haines teaches directly away from the present invention, because weight activation of Haines causes the umbrella-like covering to spread to a position where it hides people and things underneath it. This is opposite the present invention of claim 28.

Accordingly, claim 28 is allowable over Haines, and the Board is requested to reverse the Examiner's rejection of claim 28 over this art.

Issue 3: Whether claims 1-3, 6-7, 11-12, 14-16 are unpatentable under 35 USC §103(a) over Radig 3,902,264?

Argument – Claims 1, 3, 6, 12, 14, 16 (as a group) and claims 2, 7, 11, 15 (individually) are not obvious in view of Radig '264 for the following reasons.

Briefly summarized, the cited prior art does not render the claims 1, 3, 6, 12, 14, 16 (as a group) and claims 2, 7, 11, 15 (individually) as unpatentable because, A) the cited art does not show or suggest elements or combinations of elements of the claimed inventions, B) there are insufficient reasons given by the Examiner to read the cited art as proposed, C) even if read as proposed by the Examiner, the cited art does not render the claimed invention unpatentable because elements and/or features are lacking, and D) instead, the prior art teaches away from the combination of the present invention and teaches away from the combination proposed by the Examiner. (See MPEP 2131.)

In order to render a claimed invention unpatentable, the art must reasonably teach or suggest the claimed invention. In other words, the claimed invention cannot be used as a template to piece together teachings of prior art. *In re Fritch*, 972 F2d 1260 (Fed. Cir. 1992). The opinion of *In re Fritch* adds "Mere fact that prior art may be modified to reflect features of claimed invention does not make modification and hence, claimed invention obvious unless desirability of such modification is suggested by the prior art". (*Fritch*, supra, 1783) In particular, the MPEP §706.02(j) requires that three criteria must be met in order to establish a

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*prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Fine*, 837 F2d 1071 (Fed Cir 1988). Second, there must be a reasonable expectation of success. *In re Merck & Co Inc*, 800 F2d 1091 (Fed Cir 1986). Third, the prior art reference (or references) must teach or suggest all the claim limitations. *In re Royka*, 490 F2d 981 (CCPA 1974). Also, functional language in an apparatus claim requires that the anticipatory reference possess the capability of performing the recited function. *R.A.C.C. Industries, Inc. V Stun-Tech Inc.*, 178 F3d 1309 (Fed Cir 1998) (*Intel Corp. v U.S. International Trade Comm*, 946 F2d 821, 832 (Fed Cir 1991)).

Claim 1 defines a covered apparatus including, among other things, a body-supporting member defining a seating area, a hood movable between a hiding position where the hood hides the seating area and an open position where the hood uncovers the seating area, “a link-and-bias mechanism operably connected to the hood to automatically move the hood toward the open position when a person removes their weight from the body-supporting member”, and a latch “moveable between a latched position where the latch secures the body-supporting member in a secured position against a force of the link-and-bias mechanism until the person places a portion of the person’s body weight on the body-supporting member, and configured to automatically move to a released position when the person places the portion of their body weight on the body-supporting member”. This claim clearly requires three positions. Position one is when the latch is latched and the hood is covering the seating area. Position two is when the latch is unlatched and the hood is still covering the seating area and weight is on the body-supporting member (i.e. a person sits on the seat which causes the latch to “automatically” release). Position three is when the hood is automatically swung open (i.e. the person stands up).

As noted above in “Section Va” of this appeal brief, Radig 3,902,264 discloses a blind for hunters, including a foot pedal that is depressible and that includes a linkage (122/118/116/112) and upper frame assembly (32) that swings opposing halves of a collapsible cover shroud (16) horizontally outwardly when the pedal is depressed. Radig discloses a latch-type release mechanism 94/100 (Fig. 2) but it does not disclose a latch as defined in claim 1. Instead, the cover of Radig requires that weight be applied to open his cover. Applicant argues



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strongly that Radig teaches directly away from the present invention by teaching a foot-operated pedal that requires weight activation in order to move the cover out of the way (i.e. to “uncover” the seating area). This is directly opposite how the present invention of claim 1 works. There is no suggestion or teaching in Radig that would lead an artisan to read Radig as teaching the invention as defined in claim 1. Nor is there any teaching or discussion of a problem that would lead an artisan along a path to modify the structure of Radig in this manner. The Examiner has unfairly and improperly used Applicant’s own application as a road map to reject claim 1.

Radig discloses a blind for hunters having two positions – position one being when the covering is held in a closed position and a person is sitting down, and position two being when the person presses on the pedal to open the covering and simultaneously stands up. However, this leads to an imbalance to the hunter as he stands up, which adversely affects aiming of his gun. Further, it is distracting to a hunter to think about unlatching the cover at the same time as trying to aim a gun. Radig teaches that this cumbersome way of operating his hood is desirable, and does not teach a different arrangement in any sense. Claim 1 clearly defines an apparatus specifically designed to avoid this problem ... where a latch holds the hood closed before a person sits down, where the latch is automatically released when a person sits down, and where the hood automatically opens when the person stands up. The Examiner admits that “Radig does not expressly disclose that the hood moves toward the open position when a hunter removes his weight from the body supporting member ...” (see Office Action, page 6, line 15.), but then takes the position that it is obvious to a person skilled in this art to make this change. However, this assertion is unsupported, and is improper speculation by the Examiner. There is no support in Radig for any such position. There are in fact reasons not to do so, since Radig teaches a method including “step on a foot pedal, stand, aim, and shoot”. This is decidedly different and more complicated and cumbersome than “stand, aim, and shoot”. The action of stepping down is both inconvenient to a hunter and adversely affects his aim. Also, during the excitement of seeing prey, it can be and is very distracting to have to step on a pedal.

The Examiner stated in the Office Action that: “Note: Functional recitation(s) using the words “for” have been given little patentable weight because they fail to add any structural limitations and thereby regarded as intended use language.” (See the Office Action dated

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November 18, 2003, halfway down the page.) First, it is noted that “configured” is a structural recitation since it requires that the part (i.e. the “latch” in claim 1) be constructed or shaped a certain way. Thus, this recitation of the construction of the latch is structural must be considered. Applicant is not sure that the Examiner did adequately consider this language in claim 1. The Examiner is invited to respond to this assertion. Second, even if the language of concern is considered functional, this language must be considered unless the cited reference is capable of performing the intended use. (Notably, the Examiner made this statement in his Office Action.) (Also, there are cases that support that fact that functional language in an apparatus claim requires that the anticipatory reference possess the capability of performing the recited function. *R.A.C.C. Industries Inc. V Stun-Tech Inc.*, 178 F3d 1309 (Fed Cir 1998) (*Intel Corp v U.S. International Trade Comm*, 946 F2d 821, 832 (Fed Cir 1991).) The present rejection is a 103-type obviousness rejection. Radig does not have a latch that operates like the recited latch. By definition, Radig does not teach a structure capable of the recited language, because the apparatus disclosed in Radig doesn’t work like what claim 1 has recited (hence the 103-type rejection).

Further, if a latch were added to the foot pedal of Radig, a hunter would not be able to move his leg and foot without potentially causing his hood to fly open. This would be very disconcerting to a hunter . . . and very angering if it occurred when prey was approaching . . . which is exactly when it would be most likely to occur.

Therefore, claim 1 (and claims 3, 6, 12, 14, 16 which go with claim 1 as a group) is allowable over Radig, and the Board is requested to reverse the Examiner’s rejection of these claims.

Claim 2 is patentable for all of the reasons given above in regard to claim 1, since claim 2 is dependent on claim 1. Further, claim 2 is more specific than claim 1 when claim 2 defines a seat. Claim 2 is not rendered unpatentable in view of Radig because of the additional reason that Radig uses a foot-operated pedal to release his mechanism, and does not disclose or suggest connecting his release mechanism to his seat. Instead, Radig teaches directly away from anything suggesting or defining a seat-operated latch, because Radig teaches a separate seat and separate foot-operated pedal. Radig further does not include any discussion of a problem nor reason to

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connect his seat to his release mechanism. How can Radig be cited to render claim 1 unpatentable when he triggers his release mechanism in a way specifically discussed as a problem in the present application? How can Radig be cited to reject claim 1 when claim 1 recites a structure that specifically solves a problem found in Radig? This cannot be anything other than hindsight reasoning, which is improper. Nothing in Radig discloses or suggests connecting a latch to a seat. Instead, Radig effectively teaches away from using the seat, by providing a separate foot-operated pedal device. Accordingly, claim 2 is also allowable over Radig.

Claim 7 is allowable for the same reasons given above for claim 1 since it is dependent on claim 1, and further claim 7 is allowable for the same reasons given above in regard to claim 2 since claim 7 defines a seat. It is noted that claim 7 is dependent on claim 6, such that it defines the seat in combination with the subject matter of claim 6, which requires a specific link mechanism connecting the body-supporting member (i.e. the seat) to the hood. Therefore, claim 7 is separately patentable from claim 2. For these reasons, claim 7 is allowable.

Claim 11 is allowable for the same reasons given above for claim 1 and 6 and 7, since it is dependent upon this chain of claims, and further claim 11 is allowable because of the same reasons given in regard to claim 2 (i.e. claim 11 is dependent on claim the seat). Still further, Radig does not disclose or suggest operably connecting a link mechanism to a rear of his seat. Instead, Radig requires that his mechanism be connected to a foot pedal that extends forward under a front of his seat. There is no teaching or suggest (nor reason) to attach a latch to a rear of the apparatus of Radig. Further, any such attachment would make the apparatus of Radig non-functional. Thus, claim 11 is allowable over Radig.

Claim 15 is allowable for the same reasons given above for claim 1, since it is dependent upon a chain of claims that includes claims 1 and 12. Claim 15 is further allowable since it defines a second spring that can be selectively used individually or in combination with a first spring (to accomplish a faster hood-opening motion), which to Applicant's best knowledge is not taught in the prior art. Applicant finds no reason given in the Office Action why an apparatus having two springs is not patentable. The Examiner has not met his burden of proof. Further, the idea of providing two springs is counter-intuitive. Why provide two springs when a single spring will work? After all, two springs are more expensive. It is improper to, in hindsight,

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merely say that it would be easy to add a second spring. "Easiness" is not the test for patentability. Further, the "naked assertion" that it is obvious to add a second spring is not well founded. If more strength were needed, a larger first spring would be used. Why would anyone supply two springs when a single one would work? The prior art does not teach that it is desirable to provide two separate springs that can be selectively used individually or together to provide different hood opening speeds and actions.. No-one has done so. This by itself suggests that no-one conceived of providing two such springs.

Accordingly, the Board is requested to reverse the rejection of claims 1-3, 6-7, 11-12, and 14-16.

Issue 4: Whether claims 5 and 17 are unpatentable under  
35 USC §103(a) over Radig 3,902,264 in view of  
Kanter 5,339,847 and Seaman 3,838,838?

Argument – The legal standard for patentability is provided under Issue 3, and will not be repeated.

Claim 5 is dependent on claim 1, and is allowable for that reason, as discussed above. Claim 5 further defines a base including radially extending legs configured to stably support the body-supporting member and hood in a freestanding manner. Radig discloses a blind having a pointed stake bottom part (18). Kanter discloses a beach umbrella and Seaman discloses a Christmas tree holder. These patents are non-analogous. The test for whether a patent is analogous is two part: 1) whether the art is from the same field of endeavor, regardless of the problem addressed, and 2) if not from the same field, whether it still is reasonably pertinent to the particular problems with which the inventor is involved. If it is for a different purpose, the inventor would have less motivation to consider it. *In re Clay*, 966 F2d 656 (Fed Cir 1992). The devices of Kanter and Seaman are from different fields of endeavor. For example, devices such as Kanter are intended for use in public areas, such as on a beach, with lots of people. Christmas tree stands such as disclosed in Seaman are used in homes. In regard to the second question of "pertinence to the particular problem" of the present invention, why would a beach umbrella be used on a device having an automatically opening "flip up" hood? Why would a

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person want a hood to flip open every time they stood up from a chair on the beach? It is counter-intuitive to make any such combination. Applicant argues that it is not sufficient for the Examiner to merely point out that the devices of Kanter and Seaman use their legs for stability, such as to resist wind movement, while ignoring teachings in the reference as a whole. It would be very unusual for an artisan skilled in this art to be able to pick out Kanter or Seaman from the "sea of prior art" without some instruction or suggestion from the present invention, which instruction is not found. Applicant argues that, considering everything, the Examiner has not met his burden.

Claim 17 is allowable since it is dependent on claim 1 (and also on intervening claim 16), and further is allowable for the same reasons given above in regard to claim 5.

Issue 5: Whether claim 9 is unpatentable under 35 USC §103(a) over Haines 4,813,442 in view of Dubinsky 6,129,101?

Argument – The legal standard for patentability is provided under Issue 3, and will not be repeated.

Claim 9 is dependent on claim 1, and is allowable for that reason, and is also allowable since it is dependent on a chain of claims including claims 1, 6, and 8, as discussed above. Intervening claim 8 defines the apparatus as having a framework with a tubular member defining an internal cavity and with the link mechanism including a movable component located within the cavity, and claim 9 further defines the link mechanism as including a cable with a first end extending out of the cavity and operably connected to the body-supporting member, and with a second end extending out of the cavity and operably connected to the hood.

The Office Action cites Haines for teaching a tubular frame member, admits that Haines does not teach a cable, but cites Dubinsky as teaching a cable (38). However, as discussed above, Haines mounts his sleeve (18) on an outside of his post framework (19). Further, the spindle (22) in Haines is not part of a link-and-bias mechanism, but instead is only an upright stud extending from a ground-supported base for maintaining the frame of Haines in an upright position. Dubinsky has a sliding weight (36) within his tubular frame (20), and attaches a cable (38) to the his umbrella to create a counterbalance. However, the weight is entirely within the

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tubular frame. Only the top portion extends outward from the cavity of his tubular frame. There is no reason to extend a lower portion of his cable out of the cavity. In fact, there is a reason to keep the weight (and cable) entirely within the tubular frame ... that reason being so that a person does not place their fingers into the hole and have them amputated by the weight as the weight comes down. Also, Dubinsky gives no reason for making any such modification. Accordingly, not only does Dubinsky not show the arrangement claimed, there are reasons not to modify Haines by Dubinsky due to the teachings of Dubinsky.

Notably, Dubinsky is for a garden umbrella, which is arguably non-analogous for the same reasons given above in regard to Kanter. The comments in the Office Action ignore the recitation that the recited cable in claim 9 extends out of the cavity and is operably connected at both of its ends.

The Office Action states that it is within an artisan's skill to route cables within an apparatus. While this statement may appear potentially true on a very broad level, skilled people know that "the devil is in the detail". In the present situation, there must be a reason to make such a modification. Further, there must be some teaching of how to do so, where moving components such as a body-supporting member, a latch, and a hood are operably interconnected.

Applicant finds no such teaching in the art, and it is unfair to use Applicant's own application as a roadmap to construct such an argument.

Considering all factors, Applicant urges that claim 9 is allowable over Haines and Dubinsky, and the Board is requested to reverse this rejection.

Issue 6: Whether claims 18-20 are unpatentable under  
35 USC §103(a) over Radig 3,902,264 in view of  
Dubinsky 6,129,101?

Argument – The legal standard is given above in regard to issue 3, and will not be repeated.

Briefly summarized, the cited prior art does not render the claims 18-20 as unpatentable because, A) the cited art does not show or suggest elements or combinations of elements of the claimed inventions, B) there are insufficient reasons given by the Examiner to read the cited art as proposed, C) even if read as proposed by the Examiner, the cited art does not render the

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claimed inventions unpatentable because elements and/or features are lacking, and D) instead, the prior art teaches away from the combination of the present invention and teaches away from the combination proposed by the Examiner. (See MPEP 2131.)

In order to render a claimed invention unpatentable, the art must reasonably teach or suggest the claimed invention. Claim 18 defines a blind including, among other things, a base, an upright tubular frame, a seat, a hood, a latch, and a cable that extend at least in part through the tubular frame and that operably connects the hood to the latch. The latch is “operably connected to the seat for movement between a latched position that holds the hood in the hiding position when a person is not resting on the seat, and for automatic movement to a released position when the person is resting on the seat, the latch further being configured to stay in the released position when the person stands up from the seat until the latch is reset”. This claim clearly requires three positions. Position one is when the latch is latched and the hood is covering the seat. Position two is when the latch is unlatched and the hood is still covering the seating area and weight is on the body-supporting member (i.e. a person sits on the seat which causes the latch to “automatically” release). Position three is when the hood is automatically swung open (i.e. the person stands up).

As noted above in “Section Va” of this appeal brief, Radig 3,902,264 discloses a blind for hunters, including a foot pedal that is depressible and that includes a linkage (122/118/116/112) and upper frame assembly (32) that swings opposing halves of a collapsible cover shroud (16) horizontally outwardly when the pedal is depressed. Radig discloses a latch-type release mechanism 94/100 (Fig. 2) but it does not disclose a latch as defined in claim 18. Instead, the cover of Radig requires that weight be applied to open his cover. Applicant argues strongly that Radig teaches directly away from the present invention by teaching a foot-operated pedal that requires weight activation in order to move the cover out of the way (i.e. to “uncover” the seating area). This is directly opposite how the present invention of claim 18 works. There is no suggestion or teaching in Radig that would lead an artisan to this conclusion. Nor is there any teaching or discussion of a problem that would lead an artisan along a path to modify the structure of Radig in this manner. The Examiner has unfairly and improperly used Applicant’s own application as a road map to reject claim 18.

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Radig discloses a blind for hunters having two positions – position one being when the covering is held in a closed position and a person is sitting down, and position two being when the person presses on the pedal to open the covering as the person stands up. However, this leads to an imbalance to the hunter as he stands up, which adversely affects aiming of his gun. Further, it is distracting to a hunter to think about unlatching the cover at the same time as trying to aim a gun. Radig teaches that this cumbersome way of operating his hood is desirable, and does not teach a different arrangement in any sense. Claim 18 clearly defines an apparatus specifically designed to avoid this problem ... where a latch holds the hood closed before a person sits down, where the latch is automatically released when a person sits down, and where the hood automatically opens when the person stands up. The Examiner admits that “Radig expressly disclose[s] that the hood moves toward the open position when a hunter removes his weight from the body supporting member ...” (see Office Action, page 6, line 15.), but then takes the position with this claim 18 that it is obvious to a person skilled in this art to moves the hood “when a hunter removes their weight from a body-supporting member”. However, this assertion is unsupported, and is improper speculation by the Examiner. There is no support in Radig for any such position. There are in fact reasons not to do so, since Radig teaches a method including “step, stand, aim, and shoot”. This is decidedly different than “stand, aim, and shoot”. The action of stepping down is both inconvenient to a hunter, adversely affects his aim, and (in the excitement of hunting) is very distracting.

The Examiner stated in the Office Action that: “Note: Functional recitation(s) using the words “for” have been given little patentable weight because they fail to add any structural limitations and thereby regarded as intended use language.” (See the Office Action dated November 18, 2003, halfway down the page.) However, “configured” is a structural recitation since it requires that the part (i.e. the “latch” in claim 18) be constructed or shaped a certain way. Thus, this recitation of the construction of the latch is structural must be considered. Second, even if the language of concern is considered functional, this language must be considered unless the cited reference is capable of performing the intended use, which Radig is not capable of doing. (See *R.A.C.C. Industries Inc. v Stun-Tech Inc.*, 178 F3d 1309 (Fed Cir 1998) (*Intel Corp. v U.S. International Trade Comm*, 946 F2d 821, 832 (Fed Cir 1991).)



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Dubinsky does not teach what is lacking from Radig. Therefore, claim 18 is allowable for that reason, since even if combined, there is still the missing element of a latch as defined in claim 18. Also missing are the combination of elements in claim 18. The Office Action cites Dubinsky for disclosing a cable of interest. However, as noted above in regard to claim 9, Dubinsky fails to disclose or suggest a cable with ends operably connected as defined. Therefore, even if combined with Radig, which Applicant strongly objects to, the combination lacks any teaching of a cable operably connected between a latch and a hood. Further there is no discussion of problems or reasons to make any such modification of Radig. Further, Radig would require considerable redesign in order to construct any such apparatus, none of which is taught or suggested by Radig or Dubinsky. Instead, Radig teaches a method of hood-opening that is directly different than the present apparatus of claim 18. Dubinsky is for a counterbalanced weight, which weight is ineffective and unusable if a latch stops the weight from "doing its counterbalancing function".

All arguments given in regard to claim 1 under Issue #3 apply here as well, and are adopted to support the patentability of claim 18.

Therefore, claim 18 (and claims 19-20 which go with claim 18 as a group) are allowable over Radig and Dubinsky, and the Board is requested to reverse the Examiner's rejection of these claims.

Issue 7: Whether claim 21 is unpatentable under  
35 USC §103(a) over Radig 3,902,264 in view of  
Dubinsky 6,129,101 and Sayles 3,848,352?

Argument – The legal standard is set forth under issue 3 above and will not be repeated.

Claim 21 is allowable for the same reasons given above for claim 18, since it is dependent upon a chain of claims that includes intervening claim 20. Claim 18 is further allowable since it defines a second spring that can be selectively used individually or in combination with a first spring (to accomplish a faster hood-opening motion), which to Applicant's best knowledge is not taught in the prior art. As noted above in regard to claim 15, Applicant finds no reason given in the Office Action why an apparatus having two springs is not

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patentable. The Examiner has not met his burden of proof. Further, the idea of providing two springs is counter-intuitive. Why provide two springs when a single spring will work? After all, two springs are more expensive. It is improper to, in hindsight, merely say that it would be easy to add a second spring. "Easiness" is not the test for patentability. Further, the "naked assertion" that it is obvious to add a second spring is not well founded. If more strength were needed, a larger first spring would be used. The prior art does not teach that it is desirable to provide two separate springs that can be selectively used individually or together. No-one has done so. This by itself suggests that no-one conceived of providing two such springs.

Accordingly, claim 21 is allowable, and the Board is requested to reverse the Examiner's rejection of claim 21.

Issue 8: Whether claim 22 is unpatentable under  
35 USC §103(a) over Radig 3,902,264 in view of  
Clopton 4,788,997?

Argument – The legal standard is provided under the issue 3 above and will not be repeated.

Briefly summarized, the cited prior art does not render the claims 18-20 as unpatentable because, A) the cited art does not show or suggest elements or combinations of elements of the claimed invention, B) there are insufficient reasons given by the Examiner to read the cited art as proposed, C) even if read as proposed by the Examiner, the cited art does not render the claimed inventions unpatentable because elements and/or features are lacking, and D) instead, the prior art teaches away from the combination of the present invention and teaches away from the combination proposed by the Examiner. (See MPEP 2131.)

In order to render a claimed invention unpatentable, the art must reasonably teach or suggest the claimed invention. Claim 22 defines a blind including, among other things, a base, a frame, a link and bias mechanism including a releasable latch, a seat, and a hood. The latch "when in the holding position holding the seat in the lowered position, and the latch when in the released position releasing the seat for movement from the lowered position, but the seat being configured and arranged to hold the hood in the hiding position when the hunter is resting on the seat when the latch is in the released position". This claim clearly requires three positions.

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Position one is when the latch is latched and the hood is covering the seat. Position two is when the latch is released but the hood is still covering the seat and a weight of the person is on the seat. Position three is when the hood is automatically swung open (i.e. the person stands up).

As noted above in "Section Va" of this appeal brief, Radig 3,902,264 discloses a blind for hunters, including a foot pedal that is depressible and that includes a linkage (122/118/116/112) and upper frame assembly (32) that swings opposing halves of a collapsible cover shroud (16) horizontally outwardly when the pedal is depressed. Radig discloses a latch-type release mechanism 94/100 (Fig. 2) but it does not disclose a latch as defined in claim 22. Instead, the cover of Radig requires that weight be applied to open his cover. Applicant argues strongly that Radig teaches directly away from the present invention by teaching a foot-operated pedal that requires weight activation in order to move the cover out of the way (i.e. to "uncover" the seating area). This is directly opposite how the present invention of claim 22 works. There is no suggestion or teaching in Radig that would lead an artisan to this conclusion. Nor is there any teaching or discussion of a problem that would lead an artisan along a path to modify the structure of Radig in this manner. The Examiner has unfairly and improperly used Applicant's own application as a road map to reject claim 22.

Radig discloses a blind for hunters having two positions – position one being when the covering is held in a closed position and a person is sitting down, and position two being when the person presses on the pedal to open the covering as the person stands up. However, this leads to an imbalance to the hunter as he stands up, which adversely affects aiming of his gun. Further, it is distracting to a hunter to think about unlatching the cover at the same time as trying to aim a gun. Radig teaches that this cumbersome way of operating his hood is desirable, and does not teach a different arrangement in any sense. Claim 22 clearly defines an apparatus specifically designed to avoid this problem ... where a latch holds the hood closed before a person sits down, where the latch is automatically released when a person sits down, and where the hood automatically opens when the person stands up. The Examiner admits that "Radig expressly disclose[s] that the hood moves toward the open position when a hunter removes his weight from the body supporting member ..." (see Office Action, page 6, line 15.), but then takes the position with this claim 22 that it is obvious to a person skilled in this art to moves the

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hood “when a hunter removes their weight from a body-supporting member”. However, this assertion is unsupported, and is improper speculation by the Examiner. There is no support in Radig for any such position. There are in fact reasons not to do so, since Radig teaches a method including “step, stand, aim, and shoot”. This is decidedly different than “stand, aim, and shoot”. The action of stepping down is both inconvenient to a hunter, adversely affects his aim, and (in the excitement of hunting) is very distracting.

The Examiner stated in the Office Action that: “Note: Functional recitation(s) using the words “for” have been given little patentable weight because they fail to add any structural limitations and thereby regarded as intended use language.” (See the Office Action dated November 18, 2003, half down the page.) However, “configured” is a structural recitation since it requires that the part (i.e. the “latch” in claim 22) be constructed or shaped a certain way. Thus, this recitation of the construction of the latch is structural must be considered. Second, even if the language of concern is considered functional, this language must be considered unless the cited reference is capable of performing the intended use, which Radig is not capable of doing.

Claim 22 further defines the frame as including a vertical bottom post, a vertical top post, and an offset section connecting the top and bottom posts. Claim 22 further recites the seat as being supported in a balanced position over the vertical bottom post and including a front section pivotally supported by struts and a rear section operably supported by the base and connected to the releasable latch. This creates a more balanced position for the seat.

The Office Action cites Clopton for teaching a blind where a front portion is supported by struts. However, the tubular support member (5) pointed to by the Examiner are part of a rigid frame and stationary covering. The support member (5) has nothing to do with supporting a seat. In particular, the seat in Clopton has its own legs for support. The seat in Clopton appears to be a simple frame and covering attached around a lawn-chair for hiding a person in the lawn chair. The struts referred to in Clopton don’t support a seat at all. Nor are they adapted to support a seat. Nor is the seat in Clopton attached to a latch. Nor is there any teaching to do so, nor is there a reason to make such a modification. Further, Clopton does not teach what is lacking from Radig. Therefore, claim 22 is allowable for that reason, since even if combined, there is

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still the missing element of a latch as defined in claim 22, and also missing are the combination of elements. Therefore, even if combined with Radig, which Applicant strongly objects to, the combination lacks any teaching of struts supporting a seat and a latch-attached seat. Further there is no discussion of problems or reasons to make any such modification of Radig. Further, Radig would require considerable redesign in order to construct any such apparatus, none of which is taught or suggested by Radig or Clopton.

Therefore, claim 22 is allowable over Radig and Clopton, and the Board is requested to reverse the Examiner's rejection of these claims.

#### IX. Conclusion

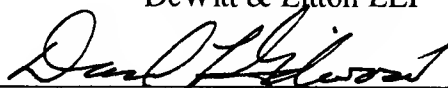
As noted above in regard to all of the claims, the prior art does not render the claims unpatentable because the cited art does not show or suggest an apparatus or blind as defined.

Accordingly, the board is requested to reverse the rejection of claims 1-3, 5-9, 11-12, 14-22 and 28, and to cause allowance of the same.

Respectfully submitted,

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Mar 16, '04

DLG/dlc

**Appendix A-1 of Claims (37 CFR §1.192(c)(9))**  
(Not amended by Amendment under §1.116)

1. (previously presented) A covered apparatus comprising:
  - a body-supporting member defining a seating area;
  - a hood operably supported over the seating area for movement between a hiding position where the hood is located over and hides the seating area and an open position where the hood is moved to uncover the seating area;
  - a framework operably supporting the body-supporting member and the hood;
  - a link-and-bias mechanism operably connected to the hood to automatically move the hood toward the open position when a person removes their weight from the body-supporting member, and
  - a latch on the framework operably connected to the link-and-bias mechanism and to the body-supporting member, the latch being movable between a latched position where the latch secures the body-supporting member in a secured position against a force of the link-and-bias mechanism until the person places a portion of the person's body weight on the body-supporting member, and being configured to automatically move to a released position when the person places the portion of their body weight on the body-supporting member.
2. (original) The apparatus defined in claim 1, wherein the body-supporting member comprises a seat.
3. (original) The apparatus defined in claim 1, wherein the hood includes a flexible covering that is camouflaged and made of material suited for outdoor use.
4. (canceled)
5. (previously presented) The apparatus defined in claim 1, including a base supporting the framework, the base including radially extending legs configured to stably support the

body-supporting member and hood in a freestanding manner.

6. (previously presented) The apparatus defined in claim 1, wherein the link-and-bias mechanism includes a link mechanism connecting the body-supporting member to the hood.

7. (original) The apparatus defined in claim 6, wherein the body-supporting member comprises a seat configured and adapted to support a person's body weight.

8. (original) The apparatus defined in claim 6, wherein the framework includes tubular members defining an internal cavity and wherein the link mechanism includes a movable component located within the cavity of the framework.

9. (previously presented) The apparatus defined in claim 8, wherein the link mechanism includes a cable with a first end extending out of the internal cavity and operably connected to the body-supporting member, and with a second end extending out of the internal cavity and operably connected to the hood.

10. (canceled)

11. (original) The apparatus defined in claim 8, wherein the link mechanism is connected to a rear of seat.

12. (original) The apparatus defined in claim 1, including a spring attached to the hood and biasing the hood toward the uncovered position.

13. (canceled)

14. (previously presented) The apparatus defined in claim 12, wherein the spring

comprises an elastic cord.

15. (previously presented) The apparatus defined in claim 12, including a second spring that can be selectively used individually or in combination with the first-mentioned spring.

16. (original) The apparatus defined in claim 1, including a base supporting the body-supporting member and hood in a self-supporting upright manner, the base, hood, and body-supporting member being configured to fold into a compact portable package for easy carriage.

17. (original) The apparatus defined in claim 16, wherein the base includes a plurality of horizontally-oriented radially-extending tubes and includes a plurality of elongated rods shaped to telescope into the tubes, the rods each having an outer end configured to stably engage a ground surface when the rods are telescoped into the tubes, and having an inner end with a retainer thereon shaped to retain the rods to the tubes when the rods are telescoped out of the tubes but further permitting the rods to pivot to a vertical position against the base for compact storage.

18. (previously presented) A blind comprising:

- a base;

- an upright tubular frame supported on the base;

- a seat supported on the base and the upright tubular frame;

- a hood supported on the upright frame over the seat and that is movable between a hiding position where the hood is located over the seat and an open position where the hood is not located over the seat;

- a latch attached to the upright tubular frame proximate the seat and operably connected to the seat for movement between a latched position that holds the hood in the hiding position when a person is not resting on the seat, and for automatic movement to a released position when the person is resting on the seat, the latch further being configured to stay in the released



position when the person stands up from the seat and until the latch is reset; and

a cable that extends at least in part through the tubular frame and that operably connects the hood to the latch.

19. (original) The blind defined in claim 18, wherein the latch is operably connected to the seat.

20. (original) The blind defined in claim 18, including a biasing spring attached to the hood and biasing the hood toward the open position.

21. (original) The blind defined in claim 18, including a second biasing spring, the first-mentioned spring and the second spring being individually releasably attached so that the first-mentioned and second springs can be used singularly or together to bias the hood open at a selected speed.

22. (previously presented) A blind comprising:

a base including struts;

a frame supported on the base and having a vertical bottom post, a vertical top post, and an offset section connecting the top and bottom posts ;

a link-and-bias mechanism on the frame including a releasable latch supported by the frame and movable between a holding position and a released position;

a hood operably connected to and supported for movement on the top post for movement between a hiding position and an open position; and

a seat supported in a balanced position over the vertical bottom post and including a front section pivotally supported by the struts and a rear section operably supported by the base and connected to the releasable latch, the seat being movable between a lowered position where the link-and-bias mechanism holds the hood in the hiding position and a raised position where the hood is released for movement to the open position;

the latch when in the holding position holding the seat in the lowered position, and the latch when in the released position releasing the seat for movement from the lowered position, but the seat being configured and arranged to hold the hood in the hiding position when the hunter is resting on the seat even when the latch is in the released position.

23-27. (canceled)

28. (previously presented) A covered apparatus comprising:

a seat defining a seating area and movable between a first position and a second position;

a hood operably supported over the seating area for movement between a hiding position where the hood is located over and hides the seating area and an open position where the hood is moved to uncover the seating area; and

a link-and-bias mechanism operably connecting the seat to the hood so that the first position of the seat corresponds to the hiding position of the hood, and so that the second position of the seat corresponds to the open position of the hood, the link-and-bias mechanism providing a biasing force to automatically move the hood toward the open position when a hunter removes his weight from the seat; and

a releasable latch configured to secure the seat in the first position against the biasing force of the link-and-bias mechanism even when the hunter is not placing a portion of the person's body weight on the seat.

**APPENDIX B**

**CITED ART**

<b><u>PATENT NO.</u></b>	<b><u>PATENTEE</u></b>	<b><u>DATE ISSUED</u></b>
4,813,442	Haines	03/21/1989
3,902,264	Radig	09/02/1975
3,848,352	Sayles	11/19/1974
6,129,101	Dubinsky	10/10/2000
5,339,847	Kanter et al.	08/23/1994
3,838,838	Seaman, Jr.	10/01/1974

## APPENDIX C

### CITED CASES

<i>Studiengesellschaft Kohl v Dart. Indus.,</i> 726 F2d 724 (Fed. Cir. 1984). . . . .	11
<i>Lindemann Maschinenfabrik GmbH v American Hoist &amp; Derrick Co.,</i> 730 F2d 1452 (Fed. Cir. 1984). . . . .	11
<i>R.A.C.C. Industries, Inc. v Stun-Tech Inc.,</i> 178 F3d 1309 (Fed. Cir. 1998). . . . .	11, 14, 18, 19, 22, 28
<i>Intel Corp. v International Trade Comm.,</i> 946 F2d 821, 832 (Fed. Cir. 1991). . . . .	11, 14, 18, 19, 22, 28
<i>In re Fritch,</i> 972 F2d 1260 (Fed. Cir. 1992). . . . .	11, 19
<i>In re Fine,</i> 837 F2d 1071 (Fed. Cir. 1988) . . . . .	11, 19
<i>In re Merck &amp; Co., Inc.,</i> 800 F2d 1091 (Fed. Cir. 1986) . . . . .	11, 19
<i>In re Royka,</i> 490 F2d 981 (CCPA 1974). . . . .	11, 19
<i>In re Clay,</i> 966 F2d 656 (Fed. Cir. 1992). . . . .	24

Court of Appeals, Nies, Circuit Judge, held that jurisdiction to hear appeal raising an issue of racial discrimination is vested exclusively in the district courts.

Ordered accordingly.

**Federal Courts ⇌ 1141**

**Officers and Public Employees ⇌ 72(2)**

Jurisdiction to hear appeal from order of the Merit Systems Protection Board raising issue of racial discrimination is vested exclusively in the district courts but, if counsel will expressly state that issue of racial discrimination has not been and will not be pursued by suit in United States District Court and has been abandoned, other issues involved in the case may be considered by the Court of Appeals for the Federal Circuit.

Bruce W. Miller, Philadelphia, Pa., was for petitioners.

Richard W. Oehler, Washington, D.C., was for respondent.

Before MARKEY, Chief Judge, and FRIEDMAN and NIES, Circuit Judges.

**ORDER**

NIES, Circuit Judge.

Respondent has moved to dismiss this appeal on the ground that this is a "mixed" appeal involving issues going to the merits and an issue of racial discrimination and that jurisdiction to hear an appeal raising an issue of such discrimination is vested exclusively in the district courts *Williams v. Department of the Army*, 715 F.2d 1485 (Fed.Cir.1983). Respondent's position appears correct. However, this court will retain jurisdiction if an express written statement is made by counsel that the issue of racial discrimination has not been and will not be pursued by a suit in a U.S. District Court and has been abandoned. If the issue of racial discrimination is not abandoned, the case may be transferred to a U.S. District Court pursuant to 28 U.S.C. § 1631.

Accordingly, IT IS ORDERED THAT:

Petitioners file with the court within 15 days of the date hereof either (1) a request for this court to proceed which must be accompanied by the required statement, or (2) a request for transfer to a particular U.S. District Court.

In the absence of a timely response, the appeal is subject to dismissal for lack of prosecution.



**STUDIENGESELLSCHAFT KOHLE,  
M.B.H., Appellee,**

v.

**DART INDUSTRIES, INC., Appellant.**

No. 83-591.

United States Court of Appeals,  
Federal Circuit.

Jan. 19, 1984.

Patent infringement action was brought. The United States District Court for the District of Delaware, 549 F.Supp. 716, Caleb M. Wright, Senior District Judge, held that the patent was valid and was infringed, and appeal was taken. The Court of Appeals, Rich, Circuit Judge, held that: (1) trial court's finding that patent for catalysts used in polymerization of ethylene and other lower olefins, including propylene, was not anticipated was not clearly erroneous; (2) sufficient evidence of commercial success attributable to patented catalysts supported their nonobviousness; (3) patentee's failure to cite prior German patent to Patent Office examiner did not establish fraud; (4) fact that another individual was the first actually to polymerize propylene with the claimed catalysts was immaterial to infringement question; (5) patent was valid and was infringed; and (6) patentee's silence during five-year absence

of negotiations did not give rise to an estoppel.

Affirmed and remanded.

1. Patents ⇐ 51(1)

Anticipation of a patent must be found in a single reference, device or process.

2. Patents ⇐ 51(1)

Trial court in patent infringement action was correct in refusing to combine teachings of several references to build an anticipation.

3. Patents ⇐ 324.55(4)

Trial court's finding that patent covering catalysts used in polymerization of ethylene and other lower olefins, including propylene, was not anticipated was not clearly erroneous.

4. Patents ⇐ 36.2(9)

Evidence of commercial success attributable to patented catalysts used in polymerization of ethylene and other lower olefins, including propylene, and evidence of their solution of unmet needs supported trial court's finding of their nonobviousness.

5. Patents ⇐ 314(2)

Very limited attention which trial court in patent infringement action gave to claim that patentee was guilty of fraud in its failure to cite prior German patent to Patent Office examiner did not constitute a legally insufficient finding on the issue, given fact that there was no testimony on the subject at trial and it was first developed in infringer's posttrial briefs.

6. Patents ⇐ 312(6)

Considering that there was no live testimony, that documentary evidence was conflicting, and that trial court determined that prior German patent had no effect on validity, and therefore none on patentability, and that facts supporting legal conclusion of fraud must be shown by clear and convincing evidence, trial court's finding that there was no fraud in patentee's failure to cite prior German patent to Patent Office examiner was correct.

7. Patents ⇐ 314(2)

With regard to infringer's contention that patent covering catalysts used in polymerization of ethylene and other lower olefins, including propylene, was invalid because another individual was first actually to polymerize propylene with the claimed catalysts, since claims found to have been infringed were for catalysts, not for polymerization processes, it was immaterial who was the first to use such catalysts to polymerize propylene.

8. Patents ⇐ 251

"Reverse doctrine of equivalents" did not apply to action for infringement of patented catalysts used in polymerization of ethylene and other lower olefins, including propylene, since infringer's catalysts were not so dissimilar to those contemplated by patentee and his coinventors that it was inequitable to regard former as being within scope of the claims; moreover, fact that infringer's catalysts might be superior to those actually invented, disclosed and contemplated by patentee did not by itself remove infringer's catalysts from scope of claimed infringement.

9. Patents ⇐ 243(1)

Patent No. 3,113,115 covering catalysts used in polymerization of ethylene and other lower olefins, including propylene, was valid, enforceable, and infringed.

10. Estoppel ⇐ 95

More than simple silence must be shown to support an estoppel.

11. Patents ⇐ 283

Defense of estoppel to patent infringement action was not established where infringer showed nothing more than silence on part of patentee during five-year period during which there were no negotiations.

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Thomas F. Reddy, Jr., New York City, argued for appellant. With him on the brief were Gerald J. Flintoft, Stanton T. Lawrence, III, Brian M. Poissant and Arthur G. Connolly, Jr., New York City.

Arnold Sprung, New York City, argued for appellee. With him on the brief was Nathaniel Kramer, New York City.

Before MARKEY, Chief Judge, and RICH and DAVIS, Circuit Judges.

RICH, Circuit Judge.

This appeal is from the interlocutory judgment of the United States District Court for the District of Delaware (Wright, J.), holding U.S. patent No. 3,113,115 to Ziegler et al. (Ziegler patent) valid, enforceable, and infringed by appellant Dart Industries, Inc.'s catalytic production of commercial grade polypropylene and ordering an accounting. 549 F.Supp. 716, 216 USPQ 381 (D.Del.1982). We affirm and remand for an accounting.

The technical facts concerning the claimed catalysts and Dart's allegedly infringing process, as well as other matters essential to understanding this case, have been painstakingly set forth in the extensive opinion of the trial court, familiarity with which is assumed, and will be repeated herein only as strictly necessary. The unusually thorough and meticulously detailed opinion of Judge Wright with 157 footnote references and explanations manifests a comprehensive grasp of the facts and the applicable law so that we deem it sufficient to treat summarily the issues argued on this appeal. It suffices here by way of introduction to the case, to say that it involves the oft-litigated but now expired Ziegler patent for catalysts used in the polymerization of ethylene and other lower olefins, which includes propylene. The involved claims are very broad, and define with varying specificity catalysts made of an alkyl aluminum compound and a heavy metal salt, oxide, or hydroxide.\* Attention in this case has focused on a preferred catalyst made of an alkyl aluminum halide and a titanium halide.

\*The claims in suit are annexed to this opinion as an Appendix. The claim principally asserted below was claim 4 in which the aluminum compound is defined as a dialkyl aluminum

Dart uses in its process a catalyst made of diethyl aluminum monochloride (DEAC) and titanium trichloride.

At trial, Dart asserted that the invention claimed in the Ziegler patent was anticipated under 35 U.S.C. § 102 by that described in German patent No. 874,215 to Fischer (Fischer patent). Dart also asserted that the claimed catalysts would have been obvious under 35 U.S.C. § 103 from the Fischer patent and two articles written jointly by Hall and Nash. It further asserted that the Ziegler patent had been obtained by fraud and for that reason was unenforceable. Dart also denied infringement, either literal or under the doctrine of equivalents, and maintained that appellee, Studiengesellschaft Kohle m.b.H. (herein SGK), Ziegler's successor in interest, should be barred from maintaining suit under the equitable principles of laches and estoppel. These same grounds of invalidity or unenforceability have been reargued before us. We shall take them up in order.

## I. Validity

### A. Anticipation

Dart argues, contrary to well-established law, that the trial court made an error of law in holding that anticipation must be found within a single reference. It points out that other references may be used to interpret that reference and to reveal what it would have meant to one of ordinary skill at the time the invention was made. Specifically, Dart contends that Fischer, "taken with the clear and directly applicable disclosure of the Hall and Nash publications demonstrating the extent of knowledge of one skilled in the art . . . does clearly and unambiguously indicate that a mixture of diethyl and monoethyl aluminum chlorides is formed under the Fischer reaction conditions." (Emphasis in original.)

[1, 2] The district court correctly stated the law regarding anticipation. It is hornbook law that anticipation must be found in

monohalide and the heavy metal is a metal from group IV-B of the periodic system, which group consists of titanium, zirconium, and hafnium. Titanium is the metal involved here.

a single reference, device, or process. Dart's reliance on the caveat to that rule permitting the use of additional references to interpret the allegedly anticipating reference is misplaced. The trial court was not only aware of this caveat, but also applied it in a thorough and convincing manner. Dart relies on the Hall and Nash articles for a very specific teaching, not for any light they shed on what Fischer would have meant to those skilled in the art in his day. What Dart asked the trial court to do, and what it would have us do on appeal, is to combine the teachings of the references to build an anticipation. That would be contrary to settled law, and the trial court was correct in refusing to do so.

[3] Apart from this argument, Dart also relies upon the testimony of its expert, and accuses the trial court of having relied only on "certain limited, isolated, out of context and misleading testimony" to support its conclusion. It does not matter, however, that Dart on appeal may be able to reconstruct its proofs to show that another factual conclusion could have been reached. Dart must show that the conclusion which was reached was clearly erroneous. It has not done so. Our review of the testimony as cited by the trial court and the parties leads us to the conclusion that the trial court's findings on anticipation were not in error, and they are affirmed.

#### B. Obviousness

[4] Dart's position on obviousness is that "From the teachings of the Fischer and the Hall and Nash publications it would have been obvious in 1953 to polymerize ethylene to a solid polymer using a mixture of titanium tetrachloride and ethyl aluminum sesquichloride as the catalyst." It accuses the trial court of magnifying inconsequential differences in reaction conditions and products between Fischer and Hall and Nash. It relies on Ziegler's own statements in which he characterized Fischer's process as a forerunner of his invention. It also relies on an alleged nearly simultaneous invention by others at DuPont, including a Dr. Anderson, and ascribes to the trial court errors in

its assessment of the level of skill of those others, their number, and the intensity of their efforts. It attempts to discredit the commercial success and solution of unmet needs attributed to the invention of the Ziegler patent by raising the possibility that some of both may be attributable to other Ziegler catalysts and processes.

The trial court's analysis more than meets most of these contentions, and withstands all of them. We agree with the trial court that the Ziegler patent catalyst would not have been obvious. The evidence clearly shows that the cause of the catalysts in Fischer was a mystery to his contemporaries who were skilled in the art. Absent hindsight, there is no indication that Hall and Nash's work in synthesizing lubricating oils could have provided or in fact did provide a key to unlock that mystery. We agree with the trial court that Ziegler's statements on Fischer were a product of hindsight. While there may have been no basis in the record for the trial court's assumption that Dr. Anderson was a man of more than ordinary skill, Dart's evidence of nearly simultaneous solution by others is simply not persuasive under the circumstances. Even if some of the commercial success and satisfaction of unmet needs is attributable to other Ziegler inventions, the record nonetheless contains sufficient evidence of commercial success attributable to the Ziegler patent catalysts involved herein to support their nonobviousness. The trial court's conclusion to that effect is therefore affirmed.

#### C. Fraud

[5] Dart also argues that the trial court rendered a legally insufficient finding on fraud. The trial court said: "The court finds no fraud in SGK's failure to cite Fischer to the Patent Office Examiner. Dart's argument to this effect is rejected." In a footnote, the trial court explained its terseness when it noted that "although mentioned in the pre-trial stipulation . . . there was no testimony on this subject at trial and that it was first developed in the defendant's post-trial briefs." Thus, the



brevity of the trial court's comments on fraud were in keeping with its statement at the outset of its opinion, where it noted that "the sheer magnitude of the evidence presented precludes addressing each issue raised." The trial court can hardly be faulted when, in the course of preparing an opinion which occupies forty-four pages of the Federal Supplement, it felt justified in giving very limited attention to an issue which, in Dart's estimation, did not require any testimony.

[6] A problem potentially occasioned by the brevity of the trial court's comments is that the lack of explicit factual findings may have jeopardized this court's ability to review this issue on appeal. In this case, however, the problem does not arise. The bases of the trial court's holding on fraud are perfectly apparent from other portions of the opinion. Bearing in mind that there was no live testimony, that the documentary evidence was conflicting, that the trial court had just determined that Fischer had no effect on validity, and therefore none on patentability, and that facts supporting the legal conclusion of fraud must be shown by clear and convincing evidence, we agree with the trial court that Dart's assertions of fraud are without merit.

#### D. *The Natta Use*

[7] Preliminarily to challenging the trial court's findings on infringement, Dart asserts that if Ziegler's claims here in suit are "construed to cover propylene polymerization," as they have been, then they are invalid because another individual named Natta was the first actually to polymerize propylene with the claimed catalysts. Thus, it is argued, Ziegler's claims are either invalid, or not infringed by Dart's process of polymerizing propylene, because they should be more narrowly construed. We note, however, that claims 1 and 4, the claims found to have been infringed, are for *catalysts*, not for polymerization processes. It was Ziegler and his named coinventors who invented those catalysts and told Natta about them. It is here immaterial who was the first to use those catalysts to polymerize

propylene. After full and careful consideration of Dart's arguments based on the work of Natta, we find them to be without merit.

#### II. *Infringement*

[8] We agree completely with the trial court's analysis and findings on literal infringement. Dart's catalyst is indisputably within the literal terms of claims 1 and 4. The so-called "reverse doctrine of equivalents" does not apply in this case because Dart's catalyst is not so dissimilar to those contemplated by Ziegler and his coinventors that it would be inequitable to regard the former as being within the scope of the claims. That Dart's catalysts may be superior to those actually invented, disclosed, and contemplated by Ziegler et al. would not by itself remove Dart's catalysts from the scope of claims 1 and 4.

[9] Since we uphold the trial court's findings on literal infringement, it is unnecessary and therefore inappropriate to comment upon findings relating to infringement under the doctrine of equivalents.

#### III. *Laches and Estoppel*

Finally, Dart contends that Ziegler or SGK should have known that Dart was infringing the Ziegler patent when it refused a license. It also assigns error to the trial court's having deemed any delay in bringing suit to have ceased when Ziegler sued another infringer. Dart maintains that it was unreasonable for the trial court to have required Dart to show that it would not have expanded its polypropylene manufacturing facilities had Ziegler timely asserted his patent. Dart also asserts that a five-year absence of negotiations or threats from SGK gave rise to an estoppel by silence.

[10,11] Dart has not persuaded this court of any clear error in the trial court's findings on laches or estoppel, or that the denial of these equitable defenses in light of these findings was an abuse of discretion. All this court has been convinced of is that the history of business relations between

Cite as 726 F.2d 724 (1984)

Ziegler and SGK on the one hand and Dart on the other is complicated and subject to varying interpretation, with SGK maintaining that polypropylene could not be produced without Ziegler's patented catalysts, and Dart maintaining that it was doing just that. Under all of the circumstances, the finding of a delay less than six years was not clearly erroneous. SGK's silence certainly did not give rise to an estoppel in this case. As the trial court pointed out, something more than simple silence must be shown to support an estoppel, yet Dart showed nothing more. The trial court's holdings that Dart's defenses of laches and estoppel lack merit are affirmed.

### Conclusion

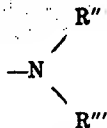
Finding, as we do, failure by appellant to show reversible error on any of the issues appealed, the interlocutory judgment of the trial court is affirmed, and this case is remanded to the trial court for an accounting and such other proceedings as that court may deem proper.

**AFFIRMED AND REMANDED.**

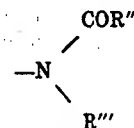
### APPENDIX

#### Claims of the '115 Patent Asserted Against Dart

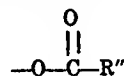
1. Polymerization catalyst essentially consisting of an aluminum compound having the general formula  $RR'A1X$ , in which R is a member selected from the group consisting of hydrogen, alkyl radicals and aryl radicals, R' is a member selected from the group consisting of hydrogen, alkyl radicals and aryl radicals, and in which X is a member selected from the group consisting of hydrogen, halogen atoms, alkoxy radicals, aryloxy radicals, secondary amino radicals of the formula



in which R'' and R''' are hydrocarbon radicals, secondary acid amide radicals of the formula

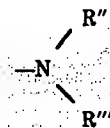


in which R'' and R''' are as given above, mercapto radicals, and radicals of carboxylic acids of the formula

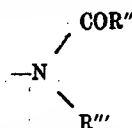


in which R'' is as given above, with a heavy metal compound selected from the group consisting of salts, freshly precipitated oxides and hydroxides of metals of groups IV-B, V-B, and VI-B of the periodic system, including thorium and uranium, metals of group VIII of the periodic system and manganese.

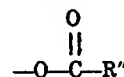
2. Polymerization catalyst, essentially consisting of the product formed by mixing an aluminum compound having the general formula  $RR'A1X$ , in which R is a member selected from the group consisting of hydrogen and alkyl radicals and aryl radicals, R' is a member selected from the group consisting of hydrogen, alkyl radicals and aryl radicals, and in which X is a member selected from the group consisting of hydrogen, halogen atoms, alkoxy radicals, aryloxy radicals, secondary amino radicals of the formula



in which R'' and R''' are hydrocarbon radicals, secondary acid amide radicals of the formula



in which R'' and R''' are as given above, mercapto radicals, and radicals of carboxylic acids of the formula



in which R' is as given above, with a heavy metal compound selected from the group consisting of salts and the freshly precipitated oxides and hydroxides of metals of groups IV-B, V-B, and VI-B of the periodic system, including thorium and uranium, metals of group VIII of the periodic system and manganese, in an inert organic solvent with at least one of said aluminum compounds and said heavy metal compounds in solution in said solvent.

3. Catalyst according to claim 1, in which said aluminum compound is a dihydrocarbon aluminum halide.

4. Catalyst according to claim 1 in which said aluminum compound is a dialkyl aluminum monohalide and in which said heavy metal compound is a compound of a metal from group IV-B of the periodic system.

9. Catalyst according to claim 1 in which said heavy metal compound is a compound of a metal from group IV-B of the periodic system.

15. Catalyst according to claim 2 in which said aluminum compound is a dihydrocarbon monohalide and in which said heavy metal compound is a heavy metal salt.



John H. KERR, Petitioner,

v.

NATIONAL ENDOWMENT FOR THE  
ARTS, Respondent.

Nos. 83-865, 83-866.

United States Court of Appeals,  
Federal Circuit.

Jan. 24, 1984.

Employee filed petition seeking review  
of decisions of Merit Systems Protection

Board involving Board's cancellation of employee's termination. The Court of Appeals, Davis, Circuit Judge, held that: (1) Board erred in determining that employee's mere reinstatement to his former title at the same grade and pay ended any further consideration by the Board concerning actual compliance with Board's order cancelling the employee's termination; the matter of compliance did not end with the formal reinstatement, and Board had jurisdiction to consider particulars of employee's claim that he had been reinstated to a "sham" position, and (2) Board did not abuse its discretion in denying, as untimely, employee's motion for attorney fees, where employee's attorney failed to inquire into the time limit and simply claimed to have been too busy to file his motion on time or to have sought an extension.

Affirmed in part and vacated in part.

#### 1. Officers and Public Employees ⇌ 72(2)

The purpose of an order of the Merit Systems Protection Board cancelling an employee's termination is to place the employee as nearly as possible in the status quo ante.

#### 2. Officers and Public Employees ⇌ 72(2)

Appropriate steps to enforce compliance with an order of the Merit Systems Protection Board cancelling an employee's termination must include more than the formal determination that an individual was reinstated to a position bearing the same title, grade and pay; rather, Board should, where appropriate, also make a substantive assessment of whether actual duties and responsibilities to which employee was returned are either the same or substantially equivalent in scope and status to the duties and responsibilities held prior to the wrongful discharge, and Board should order corrective action in cases of noncompliance. 5 U.S.C.A. § 1205(a)(2).

#### 3. Officers and Public Employees ⇌ 72(2)

Merit Systems Protection Board erred in determining that employee's mere rein-

The primary Section 103 issue<sup>15</sup> presented by the parties is whether it would have been obvious to one of ordinary skill in the art in October of 1963 \* \* \* to combine Jones or Gordon with Evans in such a way as to produce the concept claimed in Cole. While the fact that the Examiner apparently did not consider a prior art patent disclosing a digital character generator deprives the Cole patent of its presumption of validity, I nevertheless conclude that Cole is not obvious based on Evans in light of Jones or Gordon.

<sup>15</sup> As explained in an earlier footnote, I conclude that Cole, if not anticipated by Dirks, is obvious from Dirks in light of Brown et al. and others. See n. 6, *supra*. [558 F.Supp. at 952, 217 USPQ at 431.]

Footnote 6 merely states:

<sup>6</sup> The use of both sawtooth and staircase (or stepping) waveforms for vertical and horizontal deflection in CRTs was common prior to 1960, as evidenced by the Brown and Gordon patents. \* \* \* It was a matter of designers' choice. Thus, if Dirks is distinguishable on the basis of its stepping in a vertical direction, Cole was nevertheless obvious from the prior art and invalid under 35 U.S.C. § 103. [558 F.Supp. at 948, 217 USPQ at 428.]

This was the extent of the district judge's obviousness analysis that included a mention of Dirks.

The excerpts indicate that it is not clear whether the district judge relied on Dirks in his obviousness analysis.<sup>3</sup> While the text speaks of combining Evans, Jones and Gordon, footnote 15 states that Cole was obvious in light of Dirks and Brown. The district judge seemed to have either ignored Dirks in the obviousness analysis or believed that an anticipatory reference such as Dirks need not or could not be included in such analysis. The factfindings

3. Contrary to majority's belief that appellees alone contributed to the district court's confusion, RCA also contributed to that confusion. In a footnote on page 39 of its Post-Trial Brief, RCA stated:

As noted earlier, the inoperativeness of the foreign Dirks patents removes them from pos-

fail to disclose to us the steps by which the district judge reached his obviousness conclusion. See *Kelley, supra*; *Morow, supra*. It is confusing as to whether he relied on or ignored Dirks in the factfindings regarding the "differences" between Cole and the prior art references. See *Packer, supra*. Failure to explicitly include Dirks in factfindings regarding the "differences" so as to provide an appellate court with a clear understanding of the basis of the district court's obviousness determination is reversible error. See *Golf City, supra*; *United Shoe, supra*.



LINDEMANN MASCHINENFABRIK  
GMBH, Appellant,

v.

AMERICAN HOIST AND DERRICK  
COMPANY, Harris Press and Shear Division, Commercial Metals Company, Appellees.

No. 83-1178.

United States Court of Appeals,  
Federal Circuit.

March 21, 1984.

Assignee of patent No. 3,945,315 on hydraulic scrap shears brought action for infringement of certain claims of patent, and defendant counterclaimed for declaration that patent was invalid. The United States District Court for the Southern District of Texas, Ross N. Sterling, J., held patent claims invalid, and assignee appealed. The Court of Appeals, Markey, Chief

sible consideration as anticipatory references, \* \* \* and from consideration as to the obviousness of the Cole patent \* \* \*.

In addition, RCA, on page 18 of the same Post-Trial Brief, acknowledged HLA's arguments at trial regarding the obviousness of the Cole invention in light of Dirks.

Judge, held that: (1) finding that inventions set forth in patent claims were anticipated by prior patent was clearly erroneous; (2) finding that inventions set forth in claims would have been obvious was clearly erroneous; (3) district court erred in concluding that patent specification was nonenabling; and (4) action was properly remanded for determination on infringement issue.

Reversed and remanded.

#### 1. Patents ⇨314(2)

In action challenging validity of patent, trial court's role in relation to patentability does not require it to conclude whether something was or was not "invented," or whether court subjectively considers invention "worthy" of patent protection; court's role is simply to determine whether patent's challenger carried burden of establishing invalidity. 35 U.S.C.A. § 282.

#### 2. Federal Courts ⇨850

While source of findings does not render "clearly erroneous" standard any less applicable or binding on appellate review, apparent absence of trial court's personal attention need not be disregarded. Fed. Rules Civ.Proc.Rule 52(a), 28 U.S.C.A.

#### 3. Federal Civil Procedure ⇨2280

Where adopted findings of fact are those proposed by party before trial, greater chance is created that those findings may be clearly erroneous. Fed.Rules Civ. Proc.Rule 52(a), 28 U.S.C.A.

#### 4. Federal Courts ⇨752

While Court of Appeals reviews judgments, not rhetoric in opinions, language in opinion, or in set of findings and conclusions, may indicate that numerous harmful errors of law produced erroneous conclusion and that decisional approach of district court led to judgment not supported in law by facts of record.

#### 5. Patents ⇨324.55(2)

In action challenging validity of patent, anticipation is factual determination, reviewable under "clearly erroneous" stan-

dard. 35 U.S.C.A. § 102(b); Fed.Rules Civ. Proc.Rule 52(a), 28 U.S.C.A.

#### 6. Patents ⇨72(1)

Anticipation of patent requires presence in single prior art reference disclosure of each and every element of claimed invention, arranged as in claim. 35 U.S.C.A. § 102(b).

#### 7. Patents ⇨72(1)

In deciding issue of anticipation, trier of fact must identify elements of claims, determine their meaning in light of specification and prosecution history, and identify corresponding elements disclosed in allegedly anticipating reference. 35 U.S.C.A. § 102(b).

#### 8. Patents ⇨312(6)

In action challenging validity of patent on hydraulic scrap shears, finding that inventions set forth in certain claims of patent were anticipated by prior patent was clearly erroneous, where district court's analysis treated claims as mere catalogues of separate parts, in disregard of part-to-part relationships which gave claims their meaning. 35 U.S.C.A. § 102(b).

#### 9. Patents ⇨112.1

Burden upon challenger of validity of patent is to introduce evidence of facts establishing invalidity, thus overcoming presumption of validity, and that evidence, if it is to carry the day, must be clear and convincing. 35 U.S.C.A. § 282.

#### 10. Patents ⇨112.1

In action challenging validity of patent, trial court erred in ruling that introduction of nonconsidered art weakened or eliminated statutory presumption of validity, and in adjusting required level of proof downward to "mere preponderance"; that clear and convincing standard may more easily be met when such nonconsidered art is more pertinent than cited art meant that determination of whether patent challenger had met its burden turned on relationship of uncited art to claimed invention. 35 U.S.C.A. § 282.

**11. Patents ⇨312(1½)**

To extent that examiner's consideration of uncited art is material in action challenging validity of patent, burden is on challenger to show that prior art had not been considered; challenger meets that particular burden by showing that uncited art is more relevant than that cited, just as patentee defeats uncited art by showing that its relevancy is equal to or less than that cited. 35 U.S.C.A. § 282.

**12. Patents ⇨112.1**

Though courts, in determining validity of patent, will give due respect to examiner's evaluation of prior art, they are not bound thereby.

**13. Patents ⇨36.2(1)**

In action challenging validity of patent, district court improperly discounted weight due evidence of commercial success because that success occurred abroad; showing of commercial success of claimed invention, wherever such success occurs, is relevant in resolving issue of nonobviousness. 35 U.S.C.A. § 103.

**14. Patents ⇨16(1)**

Having concluded in action challenging validity of patent that claimed invention would have been obvious from prior art, district court erred in looking only to see whether showing of commercial success was so overwhelming as to overcome that conclusion; all evidence must be considered before conclusion on obviousness is reached. 35 U.S.C.A. § 103.

**15. Patents ⇨36(1)**

In action challenging validity of patent, evidence of unexpected results may be strong support for conclusion of nonobviousness. 35 U.S.C.A. § 103.

**16. Patents ⇨26(1)**

Fact that patent specifically stated that it disclosed and claimed combination of features previously used in two separate devices is not fatal to patentability; claimed invention must be considered as a whole, and question is whether there is something in prior art as a whole to sug-

gest desirability, and thus obviousness, of making combination. 35 U.S.C.A. § 103.

**17. Patents ⇨36(3)**

In action challenging validity of patent on hydraulic scrap shears, district court's finding that inventions set forth in certain claims of patent would have been obvious was clearly erroneous, where nothing in prior art relied on as invalidating had any relation to crushing of massive metal scrap which was distinguishing feature of shears. 35 U.S.C.A. § 103.

**18. Patents ⇨99, 314(5)**

In action challenging validity of patent, enablement is legal issue, and question is whether disclosure is sufficient to enable those skilled in art to practice claimed invention, and thus specification need not disclose what is well known in art. 35 U.S.C.A. § 112.

**19. Patents ⇨312(6)**

In action challenging validity of patent on hydraulic scrap shears, finding that patent was nonenabling because it did not disclose hydraulic and electrical system for controlling operation of rams was clearly erroneous, in light of unchallenged evidence establishing that hydraulic and electrical systems for metal scrap shears were well known to those skilled in art. 35 U.S.C.A. § 112.

**20. Patents ⇨323.1**

District court should decide validity and infringement and should enter judgment on both issues when both are raised in same patent proceeding.

**21. Patents ⇨324.60**

Where district court, in action on validity and infringement of patent, merely stated in record that patent had probably been infringed, but made no finding and entered no judgment on infringement, case was properly remanded.

---

David Toren, New York City, argued, for appellant. With him on brief was Jules Goldberg, New York City.

Michael E. Macklin, Houston, Tex., argued, for appellees. With him on brief was Edward W. Goldstein, Houston, Tex.

Before MARKEY, Chief Judge, COWEN, Senior Circuit Judge, and BENNETT, Circuit Judge.

MARKEY, Chief Judge.

Appeal from the May 23, 1983, judgment of the District Court for the Southern District of Texas, sitting without a jury and holding invalid claims 1, 2, and 4 of appellant's (Lindemann's) U.S. Patent No. 3,945,315 issued March 23, 1976 and entitled "Hydraulic Scrap Shearing Machine". We *reverse* and *remand*.

## BACKGROUND

### *The Patent*

United States Patent No. 3,945,315 ('315) issued March 23, 1976 on an application filed April 16, 1975. Peter Dahlem and Hubert Milles are named co-inventors and Lindemann is listed as the assignee. The '315 patent claims a priority filing date, under 35 U.S.C. § 119, of May 13, 1974, based on West German application 2423003.

Hydraulic scrap shears, the subject matter of the '315 patent, are a principal tool of the scrap metal industry. The shears are large, often weighing several hundred tons, and are designed to cut scrap metal into smaller, uniform pieces for recycling.

There are two basic types of metal processed in the shears: "peddler's scrap" and "rigidly massive scrap".

Peddler's scrap consists of light to medium gauge metal objects, such as light tubing, automobile bodies, and window frames. It makes up a large percentage of the available scrap and is comparatively easy to process.

Rigidly massive scrap consists of heavy gauge metal objects, such as boilers, oil

tanks, and railroad cars. Because of thickness or internal reinforcements, massive scrap objects are difficult to process. Traditionally, massive scrap had been processed in very large, tremendously powerful shears, or had been pretreated, e.g., with oxyacetylene torches, to reduce its size or weaken its internal reinforcements. Either approach was costly and time-consuming. Many scrap dealers handled peddler's scrap exclusively.

### *The Invention*

The '315 patent contains five claims. Claim 1, the only independent claim, is written in Jepson form:

1. In a hydraulic scrap-shearing machine comprising an open feed channel having two opposing side walls, scrap shears at one end of said feed channel and having a mouth narrower than the normal width of said feed channel between said side walls, hydraulic means for moving at least one of said side walls towards the other of said side walls whereby scrap placed in said feed channel can be squashed to a final width no greater than the width of said mouth of said scrap shears, and a feeder ram for pushing scrap along said feed channel into said mouth of said scrap shears, the improvement consisting of said movable one of said side walls being divided into two longitudinal portions of different lengths, and said hydraulic means comprising a main hydraulic ram having a working face forming the longer portion of said movable side wall, and an auxiliary hydraulic ram having a working face forming the shorter portion of said movable side wall just upstream of said mouth of said scrap shears, said auxiliary hydraulic ram being capable of operation independently of said main hydraulic ram.

The claimed structure is shown in Figure 2 of the '315 patent:

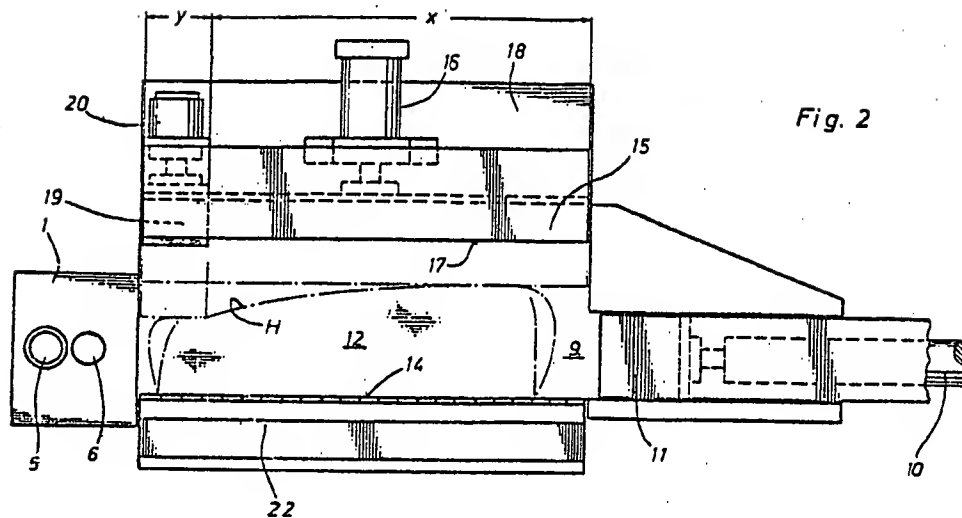


Fig. 2

In operation, the combined rams (17, 19) advance into the feed channel (9), crushing and compacting the scrap (12) against the other, non-movable sidewall (14). With peddler's scrap, the two rams move the entire distance together. However, when the channel contains rigidly massive scrap, such as shown at (12), the two rams are quickly brought to a standstill by the scrap's resistance to crushing. The auxiliary ram (19) is then moved forward independently of the main ram (17). The auxiliary ram, having a smaller working surface than the combined rams, is capable of applying a greater crushing force to the scrap. The auxiliary ram cracks and buckles the scrap directly in front of it to crush the leading end of the scrap so it can be pushed through the mouth of the shears. That action also propagates that effect to an adjacent area (H) of the scrap. The structural integrity of the scrap is thus overcome by the auxiliary ram, thereby reducing the resistance of the portion of the scrap in contact with the main ram, allowing both rams to continue forward to crush the scrap to a width less than that of the shear mouth. The feeder ram (11) then pushes the crushed scrap through the mouth of the shear and under the shear blades (at 5) and clamp (at 6). The clamp

holds the crushed scrap in place during cutting.

The claimed invention allows one machine of moderate size to process both peddler's and rigidly massive scrap, and to do so quickly, inexpensively, and without the need for pre-treating massive scrap. Unchallenged testimony described crushing accomplished in minutes of scrap that would have required hours to crush in earlier larger machines and that could not have been crushed without pretreatment.

#### *District Court Proceedings*

On October 5, 1980, Lindemann sued appellees (collectively "Amhoist") for infringement of claims 1, 2, and 4 of the '315 patent. Amhoist asserted non-infringement and counterclaimed for a declaratory judgment that the '315 patent is invalid.

A three day trial was conducted on June 21-23, 1982. On May 23, 1983, the district court entered FINDINGS OF FACT AND CONCLUSIONS OF LAW, the introduction of which stated:

After hearing all the evidence the Court concludes that the patent is invalid. Plaintiff simply incorporated two admittedly well-known metal compression features in the same machine and sought to gain a monopoly in the use of knowledge



that had previously existed in the public domain. The Court finds and concludes that the claimed invention of the Plaintiff does not meet the statutory or constitutional requirements established for patent protection. Specifically, the machine was an obvious aggregation of prior art which produced no new or synergistic result. It failed materially to promote the progress of science and the useful arts.

The district court entered 60 findings and 20 conclusions indicating its view that the '315 patent is invalid under 35 U.S.C. § 102(b), 35 U.S.C. § 103, and 35 U.S.C. § 112.

[1] On May 24, 1983 the district court entered judgment declaring the '315 patent invalid. The judgment is silent respecting infringement, though the district court had stated from the bench at end of trial:

Well, if the '315 patent is valid, I think the proof is clear that it has been infringed and it is pretty clear that it was done with knowledge, conscious knowledge to the point of willful infringement.<sup>1</sup>

### Issues

I. Whether the district court erred in finding the inventions set forth in claims 1, 2, and 4 anticipated by U.S. Patent 3,763,770 ('770) under 35 U.S.C. § 102(b).

II. Whether the district court erred in concluding that the inventions set forth in claims 1, 2, and 4 would have been obvious under 35 U.S.C. § 103.

III. Whether the district court erred in concluding that the '315 patent specifica-

tion was non-enabling under 35 U.S.C. § 112.

IV. Whether this court on remand should order entry of a judgment that claims 1, 2, and 4 were infringed by Amhoist.

### OPINION

[2, 3] Of the district court's 60 findings, 57 were those submitted by Amhoist before trial. The source of findings does not render the "clearly erroneous" standard of Fed.R.Civ.P. 52(a) any less applicable or binding. *Rosemount, Inc. v. Beckman Instruments, Inc.*, 727 F.2d 1540, n. 4 (Fed. Cir.1984). In adhering firmly to that rule, however, an apparent absence of personal attention need not be disregarded. See *Amstar Corporation v. Domino's Pizza, Inc.*, 615 F.2d 252, 258, 205 USPQ 969, 974 (5th Cir.1980), *Wilson v. Thompson*, 593 F.2d 1375, 1384 n. 16 (5th Cir.1979). Under such circumstances, one court has indicated that strict scrutiny is appropriate. See *Smith International, Inc. v. Hughes Tool Co.*, 664 F.2d 1373, 215 USPQ 592 (9th Cir.1982). Where, as here, the adopted findings are those proposed by a party before trial, a greater chance is created that those findings may be clearly erroneous. Indeed, the present findings include some for which no supporting evidence was submitted at trial.

Having written them, Amhoist argues strenuously for retention of the findings behind the shield of the "clearly erroneous" rule, and repeatedly reminds us of our duty to review the findings favorably and of the burden resting on the appellant.

1. The district court stated at the same time, "But I am not certain in my own mind at this point whether or not these gentlemen on the '315 patent invented anything". The statement reflects a misconception of the role of the courts under 35 U.S.C. § 103. The question mandated by statute is not "invention"; it is *patentability*. See *Rich, Escaping the Tyranny of Words—Is Evolution in Legal Thinking Impossible?*, 60 JPOS 71, May-June/APLA Bull. 237 (1978).

Moreover, the court's role in relation to patentability does not require it to conclude wheth-

er something was or was not "invented", or whether the court subjectively considers the invention "worthy" of patent protection. The court's role is actually more simple. Under the statute, it is to determine whether the patent's challenger carried the burden of establishing invalidity. 35 U.S.C. § 282. See *Environmental Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 218 USPQ 865 (Fed.Cir.1983), *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed.Cir.1983), *Rosemount, Inc. v. Beckman Instruments*, 727 F.2d 1540 (Fed.Cir.1984).

However salutary, the rules governing review do not envision an appellate court shirking its duty to reverse an appealed judgment that is clearly based on legal error and unsupported by evidence in the record.

[4] We review judgments, not the rhetoric in opinions. Nonetheless, the language in an opinion, or in a set of findings and conclusions, may indicate that numerous harmful errors of law produced an erroneous conclusion, and that the decisional approach of the district court led to a judgment not supported in law by the facts of record. That happened here.

#### I. Anticipation

[5] Anticipation is a factual determination, reviewable under the "clearly erroneous" standard. *Carman Industries Inc. v. Wahl and Vibra Screw Inc.*, 724 F.2d 932 (Fed.Cir.1983), *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed.Cir.1983), F.R.C.P. 52(a). "A finding is 'clearly erroneous' when although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed". *United States v. U.S. Gypsum Co.*, 333 U.S. 364, 395, 68 S.Ct. 525, 542, 92 L.Ed. 746, 76 USPQ 430, 444 (1948); *SSIH Equip. S.A. v. USITC*, 718 F.2d 365, 381, 218 USPQ 678, 692 (Fed.Cir. 1983).

[6, 7] Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed.Cir.1983); *SSIH Equip. S.A. v. USITC*, 718 F.2d 365, 218 USPQ 678 (Fed.Cir.1983). In deciding the issue of anticipation, the trier of fact must identify the elements of the claims, determine their meaning in light of the specification and prosecution history, and identify corresponding elements disclosed in the alleged-

ly anticipating reference. *SSIH, supra*; *Kalman, supra*.

[8] Lindemann contends the district court's finding on anticipation is clearly erroneous and we agree.

The finding of anticipation rested on a series of mistakes. The two gags of the '770 patent do not correspond to "said sidewall being divided into two portions of different lengths". The gags are beyond the end of the wall and constitute no part of a feed channel sidewall as claimed. The court found the '770 patent's magazine corresponded to the claimed "open feed channel having two opposing walls", but the "movable" wall of the magazine is movable only to adjust the magazine's width and not, as the claim requires, to crush scrap. Moreover, the findings that the magazine is the feed channel and that the gags are parts of a sidewall of the channel contradict each other. Nor does the shear anvil of the '770 patent, as the court stated, correspond to the "opposite sidewall" of the claim. Nor do the cylinder assemblies of the '770 patent move one sidewall of a feed channel toward the other as the claims require. Nor are the '770 patent's cylinder and gag (equated by the court to the claimed auxiliary ram) located "just upstream of said mouth". They are within the shear area and are thus downstream from where a mouth narrower than the feed channel would be if the '770 patent disclosed such a mouth, which it does not. Similarly, the other cylinder and gag of the '770 patent do not form a "longer portion of said movable sidewall". Nor can the channel that receives rod cuttings after shearing be equated, as did the district court, with the shear mouth claimed.<sup>2</sup>

The '770 patent discloses an entirely different device, composed of parts distinct from those of the claimed invention, and operating in a different way to process different material differently. Thus there is presented here no possible question of

2. Amhoist says Lindemann's Australian counsel "conceded" that the '770 patent cited by the Australian examiner was a "paper anticipation". The assertion is meaningless. First, the '315

patent's counterpart issued in Australia. Second, the language and laws of other countries differ substantially from those in the United States.

anticipation by equivalents. *See Tate Engineering, Inc. v. United States*, 477 F.2d 1336, 1342, 193 Ct.Cl. 1088, 175 USPQ 115, 119 (Ct.Cl.1973). It is clear, moreover, that the device disclosed in the '770 patent, had it come after issuance of the '315 patent, could not be found an infringement of the asserted claims. The district court's analysis treated the claims as mere catalogs of separate parts, in disregard of the part-to-part relationships set forth in the claims and that give the claims their meaning.

On the unchallenged evidence of record, we are left with a "definite and firm conviction" that the district court's finding of anticipation was mistaken and therefore clearly erroneous. That part of its judgment relating to invalidity under 35 U.S.C. § 102(b) must therefore be reversed.

## II. Obviousness

### A. Presumption of Validity

Guided by remarks found in then applicable court opinions, the district court: (1) viewed the statutory presumption of validity, 35 U.S.C. § 282, as "vanished" or "severely weakened" when Amhoist introduced prior art not cited by the examiner; (2) reduced the required burden of proof, in light of that introduction, to a "mere preponderance"<sup>3</sup>; and (3) implicitly required Lindemann to prove that the uncited art had been considered by the PTO.

(1) Courts are not, of course, at liberty to repeal a statute, or to legislate conditions diminishing its effect. Hence the statutory presumption cannot "vanish" or be "weakened" and the statutorily assigned burden of proof cannot be shifted. *Stratoflex Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed.Cir.1983). At the same time, much confusion can be avoided by patentees who refrain from efforts to expand the role of the presumption

beyond its burden-assigning and decisional approach-governing function.

[9,10] (2) The burden upon the challenger of validity under 35 U.S.C. § 282 is to introduce evidence of facts establishing invalidity (thus overcoming the presumption). *American Hoist & Derrick Company v. Sowa & Sons, Inc.*, 725 F.2d 1350 (Fed.Cir.1984). That evidence, if it is to carry the day, must be clear and convincing. *Radio Corp. v. Radio Laboratories*, 293 U.S. 1, 55 S.Ct. 928, 78 L.Ed. 1453 (1934). Because the mere introduction of non-considered art (a common phenomenon) does not "weaken" or otherwise affect the presumption, there is no basis for adjusting the required level of proof downward to a "mere preponderance". That the clear and convincing standard may more easily be met when such non-considered art is more pertinent than the cited art means that determination of whether the patent challenger has met its burden turns on the relationship of the uncited art to the claimed invention. *Stratoflex, supra*; *Railroad Dynamics Inc. v. A. Stucki Co.*, 727 F.2d 1506 (Fed.Cir.1984), *Solder Removal v. USITC*, 582 F.2d 628, 199 USPQ 129 (CCPA 1978).

(3) Similarly, the parties have devoted much unnecessary argument to the question of whether Lindemann is entitled to a presumption that the examiner had considered the uncited art because it is found in the classes and subclasses searched by the examiner (and because, as Lindemann says, the examiner had cited that art in examining an earlier application). Authorities are cited on both sides.<sup>4</sup>

[11,12] Because the touchstone is whether the uncited art is sufficiently more relevant than that cited to serve as evidence of obviousness, argument respecting

the patents found within the field which were actually considered by the examiner and listed because he found them to be most relevant". That view is flawed. The examiner could not determine which patents are "most relevant" without considering a number which are less relevant.

3. The district court in a conclusion of law also stated that "under any burden of persuasion the '315 patent is invalid because of obviousness". As indicated in the text, we disagree.

4. The district court indicated the view that "the 'Field of Search' is exactly what it purports to be and nothing more, that 'References Cited' are

a presumption based on the uncited art's classification is pointless. The argument here, moreover, appears to have led to the erroneous view that Lindemann bore the burden of proving that the uncited art had been considered. To the extent that the examiner's consideration of uncited art is material, the burden is on the challenger to show that "that prior art had *not* been considered." *Richdel Inc. v. Sunspool Corp.*, 714 F.2d 1573, 219 USPQ 8 (Fed.Cir. 1983). The challenger meets that particular burden by showing that the uncited art is more relevant than that cited, just as the patentee defeats the uncited art by showing that its relevancy is equal to or less than that cited.<sup>5</sup>

**B. Scope and Content of the Prior Art<sup>6</sup>**

"The scope of the prior art has been defined as that 'reasonably pertinent to the particular problem with which the inventor was involved'." *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535, 218 USPQ 871, 876 (Fed.Cir.1983) (and cases cited therein). The district court defined the problem here broadly, i.e., as the problem of compressing waste materials. That finding is clearly erroneous. The inventors' problem was the crushing of massive metal scrap. Nothing in the prior art relied on as invalidating had any relation whatever to the crushing of massive metal scrap.

Lindemann attempts too much in arguing that waste compactors are non-analogous. Though the problems differ, both parties manufacture both products and both are exhibited at the same trade shows. Art that is analogous may or may not render a claimed invention obvious. As indicated below, it does not do so here.

5. Though the courts will give due respect to the examiner's evaluation of prior art, they are not of course bound thereby. Patentees desiring the benefit of the examiner's evaluation of originally uncited art have available the reexamination procedures under 35 U.S.C. §§ 301-307. Those procedures were not employed in this case.

6. The level of skill is not of record and is not discussed in the briefs.

The content of the prior art discussed in Amhoist's brief is that disclosed in the '770 patent (discussed above) and in British Patent No. 1,230,014 ('014).<sup>7</sup>

The '014 patent discloses a compactor for particulate waste, e.g., garbage. The loose waste is pressed into the wide mouth of a funnel by a circular plate. The smaller end of the funnel communicates with a container to receive the compacted waste. A small finger-like ram is coaxial with, and normally moves with, the plate. When the material fills the funnel so tightly that the plate can add no more, the separately operable small ram can be advanced ahead of the main ram and into the waste material. The small ram has a diameter smaller than that of the funnel outlet. When the small ram has pressed a core of waste material through the funnel outlet, the remaining waste material is loosened and additional waste material may then be pressed into the funnel by the plate and ram working together.

In a conclusion of law, the district court stated that it had considered the facts in light of the inquiries mandated by *Graham v. John Deere & Co.*, 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 USPQ 459 (1966), and that a strong indication supporting its conclusion of obviousness was "the fact that three individuals independently created the designs which resulted in development of the split ram shears which are the subjects of this lawsuit". Because the statute, 35 U.S.C. § 135, (establishing and governing interference practice) recognizes the possibility of near simultaneous invention by two or more equally talented inventors working independently, that occurrence may or may not be an indication of obviousness when considered in light of all the circumstances. See *E.I. DuPont de*

7. The district court additionally discussed the S-501 shear produced by Amhoist and incorporating a tapered feed channel with a single side ram about one foot from the shear mouth. Amhoist correctly recognizes on appeal the absence of need to discuss the S-501 shear.

*Nemours & Co. v. Berkley & Co.*, 620 F.2d 1247, 205 USPQ 1 (8th Cir.1980). In this instance, it clearly is not. Two of the three individuals were Dahlem and Milles, the co-inventors listed on the '315 patent. The third was an Amhoist employee who claimed at trial to have proposed the split ram in January of 1979, more than five years after the invention was made by Lindemann's assignors, nearly three years after the '315 patent issued, and well after Amhoist's employee Bleeland had in England observed and photographed a Lindemann shear embodying the claimed invention. Accepting, as we must, the district court's crediting of the testimony respecting independent suggestion by an Amhoist employee, that suggestion was simply too late to have been relevant to a determination of whether the invention would have been obvious at the time it was made, 35 U.S.C. § 103, which was more than five years earlier.

#### C. Commercial Success.

[13] The district court improperly discounted the weight due the evidence of commercial success because that success occurred abroad. A showing of commercial success of a claimed invention, wherever such success occurs, is relevant in resolving the issue of non-obviousness. *Weather Engineering Corp. v. United States*, 614 F.2d 281, 222 Ct.Cl. 322, 204 USPQ 41 (1980).

[14] The evidence at trial showed that the claimed invention accounted for 30% of Lindemann's total sales worldwide for a total sales price of over \$20,000,000 (30 machines at approximately \$667,000 each). The district court correctly stated that commercial success cannot by *itself* establish nonobviousness. However, having concluded that the claimed invention would have been obvious from the prior art, the court looked only to see whether the showing of commercial success was so overwhelming as to overcome that conclusion. That was error. All evidence must be considered *before* a conclusion on obviousness is reached. *Stratoflex, Inc. v. Aeroquip*

*Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir.1983), *Kansas Jack, Inc. v. Kuhn*, 719 F.2d 1144, 219 USPQ 857 (Fed.Cir.1983), *W.L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 314 (Fed.Cir. 1983). The commercial success here shown is evidence that the claimed invention was not obvious to those who paid  $\frac{2}{3}$  of a million dollars for each machine to escape the previously perceived need for pretreatment of massive scrap.

#### D. Unexpected Results

[15] The district court ignored the unexpected or surprising results achieved by the claimed invention. Though no requirement for such results is present in the statute, 35 U.S.C. § 103, *Chore-Time Equipment, Inc. v. Cumberland Corp.*, 713 F.2d 774, 218 USPQ 673 (Fed.Cir.1983), evidence of unexpected results may be strong support for a conclusion of nonobviousness. *Kansas Jack, Inc. v. Kuhn*, 719 F.2d 1144, 219 USPQ 857 (Fed.Cir.1983).

Neither the district court nor Amhoist's brief on appeal has a word to say about the unexpected results asserted by Lindemann, namely, the rapid crushing of rigidly massive scrap in a moderate sized scrap shear without pretreatment. That the claimed inventions achieve those results is unchallenged. Neither the district court nor Amhoist suggest anything in any piece of prior art, or in the prior art as a whole, that would lead one skilled in the art to expect achievement of such results.

The record is clear that no earlier shears of any size, and no prior art device of any type could economically process rigidly massive scrap without pretreatment. Unchallenged testimony of experts was characterized by surprise and amazement that the claimed invention was able to accomplish that feat. That it could do so in minutes, and with a moderate sized structure, were further sources of surprise. That those skilled in the art had previously believed pretreatment of rigidly massive scrap was required was also uncontradicted.

It is further clear from the uncontradicted evidence that the claimed invention achieved new and unexpected results nowhere suggested in the prior art, and that the district court overlooked the effect of that achievement in reaching its determination of obviousness. In so doing, the district court erroneously focussed its inquiry "solely on the product created, rather than on the obviousness or nonobviousness of its creation". *General Motors Corp. v. U.S. International Trade Commission*, 687 F.2d 476, 482-83, 215 USPQ 484, 489 (CCPA 1982).

The district court viewed the claimed invention as merely the "aggregation" of two different sized rams. Finding the first in one place in the prior art and the second in another place, the district court entered this conclusion:

Plaintiff simply put the two features in the same machine and connected them as was necessary depending on whether the scrap was small or large. It used a known connection idea. The '315 machine possessed one known feature to operate in a known way to produce a known result to deal with the first scrap situation and another known feature operating in a known manner to produce a known result to deal with the second. Clearly, this was an obvious solution using already appreciated or obvious features to solve the problem of how to develop a machine that could handle both types of scrap most economically.

[16] The '315 patent specifically stated that it disclosed and claimed a combination of features previously used in two separate devices. That fact alone is not fatal to patentability. The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. *In re Imperato*, 486 F.2d 585, 179 USPQ 703 (CCPA 1973); *In re Sernaker*, 702 F.2d 989, 217 USPQ 1 (Fed. Cir.1983). That question must here be answered in the negative.

Nothing in the references alone or together suggests the claimed invention as a solution to the problem of crushing rigidly massive scrap. There was nothing whatever of record, therefore, to support the district court's statement that the claimed machine possessed "another known procedure operating in a known manner to produce a known result" or its conclusion that Lindemann "knew . . . that a small sidewall ram could most economically process large scrap".

The '014 patent deals only with soft, easily compactible, particulate material. Though that patent discloses a two-ram structure and the principle that loose material when too tightly compacted can be loosened by injection of a thin ram into the material, the claims here are not drawn to the mere concept of two differently sized rams, or to the known principles governing the effects of large and small rams (or to the propagation of force principle discussed at trial). That the claimed invention may employ known principles does not in itself establish that the invention would have been obvious. Most inventions do. Nothing in the '014 patent would suggest that rigidly massive scrap could be rapidly and economically crushed and sheared without pretreatment.

The '770 patent, as above indicated, deals only with holding brittle material within a shear by compression. Nothing in the '770 patent suggests that making the crushing wall of a metal scrap shear in two independently operable parts, with a smaller part adjacent the mouth of the shears, would enable the crushing of massively rigid scrap without pretreatment.

Nothing, moreover, in the '014 or '770 patents adds anything to the prior art considered by the examiner. As above indicated, the '315 specification itself recognized the separate presence in the prior art of feed channels with one solid moveable crushing wall and of feed channels with a small ram in one of two fixed sidewalls. The examiner cited as "of interest" the Pioch patent which, like the '014 patent,

disclosed two independently operable pushers in a waste compactor.

[17] Applying the standard of Rule 52(a), Fed.R.Civ.P., we are persuaded that the findings underlying the district court's conclusion of obviousness are clearly erroneous. Further, that conclusion resulted from errors of law in interpreting the claims and in consideration and application of the prior art. That part of the appealed judgment relating to 35 U.S.C. § 103 must therefore be reversed.

### III. Enablement

The district court concluded that the '315 patent was non-enabling because it did not disclose a hydraulic and electrical system for controlling the operation of the rams.

[18] Enablement is a legal issue. *Raytheon Co. v. Roper Corp.*, 724 F.2d 951 (Fed.Cir.1983). The question is whether the disclosure is sufficient to enable those skilled in the art to practice the claimed invention, hence the specification need not disclose what is well known in the art. *In re Myers*, 410 F.2d 420, 161 USPQ 668 (CCPA 1969).

The unchallenged evidence of record establishes that hydraulic and electrical systems for metal scrap shears were well known to those skilled in the art, and that the selection and connection of the elements of such systems was simply a matter of plumbing.

Amhoist points to testimony relating to 800 man hours it expended in developing its split ram shear. It also points to the dismantling of the accused machines by its two customers, whereby the rams are operated together as one sidewall and asserts that the split ram structure of the claimed invention has thus been abandoned by those customers.<sup>8</sup> There is no evidence indicating that the dismantling was due to difficulty in designing a suitable hydraulic-electric control system.

8. The record does not reflect the rationale underlying a vigorously fought lawsuit and its accompanying expense in the light of two sales

It is clear that no undue experimentation was required in practicing the claimed invention. *W.L. Gore & Assoc. Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1557, 220 USPQ 303, 316 (Fed.Cir.1983). Amhoist spent approximately 100 more hours than did Lindemann in designing the entire split ram shear, including the hydraulic-electric control system. There was no evidence of the amount of time needed to develop the control system itself. Of the total time Amhoist spent on developing its shear, it devoted an undisclosed amount attempting to create a "hydraulically operated pin" to connect the two rams. That pin was unnecessary. The '315 patent's specification discloses a simple mechanical pin to achieve the same connection. Further, Amhoist conceded at oral argument that nothing in the claims fails of enablement in the specification.

[19] The district court erred in its conclusion that the '315 patent specification is non-enabling and that part of the appealed judgment relating to 35 U.S.C. § 112 must be reversed.

### IV. Infringement

Relying on the statement made by the district court at close of trial, and on the uncontested evidence clearly establishing Amhoist's knowledge of the '315 patent and its conscious decision to disregard it, Lindemann requests this court to "affirm" the district court's "decision" on infringement. Lindemann's difficulty is that judgments, not statements, are appealed and the district court made no finding and entered no judgment on infringement.

[20] A district court should decide validity and infringement and should enter a judgment on both issues when both are raised in the same proceeding. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed.Cir.1983). To enter judgment on less than all dispositive issues can be inefficient, risking as it does the necessity of the district court and the parties

and both purchasers' cessation of use of the invention.

undertaking participation in another long and costly proceeding.

[21] The case must be remanded for the district court to make a finding on infringement. Whether the present record supports a finding corresponding with the court's end-of-trial statement, and whether further trial on the issue is therefore unnecessary, is for the district court to determine in the first instance. Upon any finding of infringement and entry of judgment on that finding, the district court will doubtless consider issuance of an injunction against further infringement and an accounting.

#### DECISION

The district court's judgment is reversed and the case is remanded for further proceedings consistent with this opinion.

REVERSED and REMANDED.



Janet L. CROSTIC, Petitioner,

v.

VETERANS ADMINISTRATION,  
Respondent.

No. 84-886.

United States Court of Appeals,  
Federal Circuit.

March 21, 1984.

On appeal from Merit Systems Protection Board, petitioner brought motion for order compelling filing of transcript of administrative hearing in lieu of appendix and in lieu of certified list of docket entries. The Court of Appeals held that in light of two-fold purpose of appendix to set out most pertinent parts of record and to provide each judge with such materials, motion for filing of transcript in lieu of appen-

dix and certified list of docket entries was properly denied.

Motion denied.

#### 1. Administrative Law and Procedure §677

In light of two-fold purpose of appendix to set out most pertinent parts of record and to provide each judge hearing case with such materials, petitioner's motion for order compelling filing of transcript of administrative hearing in lieu of appendix and in lieu of certified list of docket entries was properly denied.

#### 2. Administrative Law and Procedure §677

Appellate appendix need not be made part of printed brief or be separately printed and professionally bound; it may, in most cases, be prepared in counsel's office by photocopying papers in counsel's duplicate file and it may be bound by staples and tape.

#### 3. Administrative Law and Procedure §677

Appellate appendix should include only most significant portions of record below.

Peter B. Broida, Washington, D.C., for petitioner.

Alvin A. Schall, Washington, D.C., for respondent.

Before MARKEY, Chief Judge, and  
FRIEDMAN and NIES, Circuit Judges.

#### ORDER

Consideration has been given to petitioner's motion for an order compelling the filing of the transcript of the administrative hearing in lieu of an appendix and in lieu of the certified list of docket entries. The argument is made that the transcript runs a total of 648 pages and that the costs of reprinting could be avoided while the bulk of the brief and appendix which the court must consider would be reduced. It



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 49 U.S.P.Q.2d 1793  
 Unpublished Disposition  
 (Cite as: 178 F.3d 1309, 1998 WL 834329 (Fed.Cir.(Md.)))

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**H**

Briefs and Other Related Documents

NOTICE: THIS IS AN UNPUBLISHED  
 OPINION.

(The Court's decision is referenced in a "Table of Decisions Without Reported Opinions" appearing in the Federal Reporter. Use FI CTAF Rule 47.6 for rules regarding the citation of unpublished opinions.)

United States Court of Appeals, Federal Circuit.

**R.A.C.C. INDUSTRIES, INC.**,  
 Plaintiff/Counterclaim Defendant-Appellee,  
 and  
 Carl W. Roy II and Brian D. Willoughby,  
 Counterclaim Defendants-Appellees,  
 v.  
**STUN-TECH, INC.**,  
 Defendant/Counterclaimant-Appellant,  
 and  
 Dennis Kaufman, Defendant-Appellant,  
 and  
 Leo R. Ward, Defendant.

No. 98-1186.

Dec. 2, 1998.

Before RICH, RADER, and SCHALL, C.J.

RADER.

**\*\*1** The United States District Court for the District of Maryland granted summary judgment of infringement of a patent on remotely activated stun belts for restraining prisoners. R.A.C.C. Industries, Inc. (RACC) initiated this action against Stun-Tech, Inc. and its president, Dennis Kaufman, (collectively Stun-Tech) alleging infringement of its U.S. Patent No. 4,943,885 (the '885 patent).

After preliminary hearings and construction of the claims by the district court, both parties moved for

summary judgment. The district court granted summary judgment in favor of RACC. The district court enjoined Stun-Tech from making, using, selling or otherwise distributing its Minimum Security Belt (MSB) and High Security Transport Belt (HSTB), both sold under the name "R-E-A-C-T Belt System," during the remainder of the life of the '885 patent. Stun-Tech appeals the district court's claim construction and the finding of infringement of the '885 patent. Because the district court did not err in its construction of the claims of the '885 patent nor in its entry of summary judgment, this court *affirms*.

## I.

The '885 patent discloses a remotely activated, nonobvious (i.e., concealable) prisoner control apparatus. The prisoner control apparatus of the '885 patent is a torso-mounted stun belt which delivers an incapacitating electric shock to a disruptive prisoner wearing the belt when activated. The stun belt includes a radio receiver and a stun unit. The stun unit has several electrodes which are placed against the prisoner's body to deliver the electric shock. A radio transmitter remotely activates the stun belt to incapacitate the disruptive prisoner. To accommodate constitutional due process concerns and facilitate fair trials for dangerous prisoners, the stun belt of the '885 patent is capable of being concealed under ordinary clothing. This feature allows use of the belt in a courtroom or other public setting without identifying the prisoner as being under restraint.

On or about October 1, 1990, Stun-Tech entered into an exclusive license agreement with RACC. The license agreement gave Stun-Tech the exclusive right to manufacture and sell the stun belt embodied in the '885 patent in exchange for royalty payments. Stun-Tech later ceased royalty payments contrary to this agreement after it redesigned its stun belts in an attempt to evade the '885 patent claims. In this attempt, Stun-Tech placed the radio receiver and stun package in a single pouch which produces a noticeable bulge when worn under a prisoner's clothing. With this change, Stun-Tech hoped to evade the portions of the patent claims concerning concealability. RACC terminated the license agreement on December 28, 1992 and subsequently instituted this action against

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Stun-Tech for infringement of the '885 patent.

The '885 patent claims at issue include independent claims one and four. Claim one recites:

1. Apparatus for control of a dangerous prisoner to prevent unpredictable dangerous actions by said dangerous prisoner while in social context situations *while nevertheless concealing such apparatus from public view*, comprising:

**\*\*2** incapacitant delivery means, torso mounting means comprising a belt of sufficient extent to encircle a prisoner's torso and means for securing said incapacitant delivery means in contact with said prisoner's torso, said mounting means *being adapted for concealment beneath garments ordinarily worn by ordinary persons* in said social context *to prevent said prisoner from being marked by observers in said social context as a person under restraint*, said incapacitant delivery means being powered to deliver an incapacitating electrical shock to said prisoner, said mounting means further including means for receiving a remotely activated signal, and means in said mounting means responsive to said signal for delivering said incapacitating electrical shock to said prisoner.

(emphasis added). Claim four provides:

4. *Nonobvious prisoner control apparatus* for operation by a controlling authority located remotely from a prisoner, while said prisoner is in clothing both appropriate to a public situation, and permitting normal functions of movement by said prisoner comprising:

*means concealable beneath said appropriate clothing* of said prisoner to[ ] be controlled, securely banded around said prisoner[']s torso, for delivery of a nonlethal disabling electrical impulse to said prisoner, means connected to said electrical impulse delivery means for receiving a signal, including means for activating said electrical impulse delivery means upon receipt of said signal, and means, operable by said controlling authority, for generating and transmitting said signal for activating said electrical impulse delivery means to disable said prisoner.

(emphasis added).

Stun-Tech presented two primary arguments as to why its stun belts did not infringe these claims, both focusing on the concealability limitations. First,

Stun-Tech argued that combination of the radio receiver and stun package in a single pouch produce a noticeable bulge when worn under clothing. Therefore, Stun-Tech urged, they are not "adapted for concealment" or "concealable" as required by the '885 patent claims. Second, Stun-Tech argued that the claim language about concealability created a hybrid apparatus and method of use claim which requires concealment in actual use. Stun-Tech asserted that its belts are primarily used in open prisoner transport situations often in combination with handcuffs and shackles--far from a concealment situation. Because of this allegedly non-infringing use, Stun-Tech sought to avoid direct infringement.

The district court did not agree with either of Stun-Tech's contentions. The district court rejected Stun-Tech's proposed "hybrid" claim interpretation, instead construing both claims solely as apparatus claims. According to the district court, Stun-Tech provided "absolutely no citation to authority [for its argument] that the R-E-A-C-T belts cannot infringe on the '885 patent because they are designed to be worn outside of the clothing." The district court added that "Stun-Tech's own characterization of how its product ought to be used cannot change the fact that the product otherwise infringes every element of the claims."

**\*\*3** The district court then construed the concealability limitations to require only that the stun belts "when worn under clothing ordinarily worn by a defendant in social situations, [not] be noticeable, observable, or discern [ible] as a prisoner control apparatus." The district court stated that "the apparatus must be concealable 'beneath garments ordinarily worn by ordinary persons in said social context to prevent said prisoner from being marked by observers in said social context as a person under restraint.'" The district court continued: "This objective can be achieved by concealing the nature of the device while it is not necessary to conceal the very existence of the device." Based on this claim interpretation, the district court found that even though the accused devices produced a noticeable bulge under a prisoner's clothing, this did not avoid infringement of the '885 patent. The district court therefore granted RACC's motion for summary judgment. Stun-Tech appeals both the district

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court's claim interpretation and its grant of summary judgment of infringement.

## II.

This court reviews issues of claim construction *de novo*. See *Cybor Corp. v. FASTech, Inc.*, 138 F.3d 1448, 1454, 46 USPQ2d 1169, 1172 (Fed.Cir.1998) (in banc). With respect to the district court's grant of summary judgment, this court reviews for itself the requirements for summary judgment. See *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986). In making that review, this court enforces the requirement that a trial court may not enter summary judgment in a case with material facts in dispute. See Fed.R.Civ.P. 56(c). Further, in a summary judgment proceeding, the trial court initially, and this court on review, construes all factual inferences and resolves all doubts in favor of the non-moving party. See *Anderson*, 477 U.S. at 255; *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1307, 46 USPQ2d 1752, 1755 (Fed.Cir.1998).

On appeal, Stun-Tech asserts that the district court erred in its claim interpretation. Stun-Tech argues that claims one and four should be construed as hybrid apparatus and method of use claims. Stun-Tech further contends that these claims, when properly construed, cannot be infringed unless the accused device is used according to method of use limitations in the claims. Stun-Tech cites *In re Benson*, 57 C.C.P.A. 797, 418 F.2d 1251, 164 USPQ 22 (CCPA 1969), *In re Swinehart*, 58 C.C.P.A. 1027, 439 F.2d 210, 169 USPQ 226 (CCPA 1971), and *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 6 USPQ2d 1557 (Fed.Cir.1988) in support of its unique hybrid claim argument. These cases, however, do not authorize this court to transform an apparatus claim into a hybrid apparatus and method of use claim. Rather, these cases merely acknowledge that an apparatus claim may include functional limitations. Similarly, in *Intel Corp. v. U.S. International Trade Commission*, 946 F.2d 821, 832, 20 USPQ2d 1161, 1171 (Fed.Cir.1991), this court interpreted functional language in an apparatus claim as requiring that an accused apparatus possess the capability of performing the recited function. This court has never determined that functional language in a claim converts an apparatus claim into a

method of use or hybrid claim.

**\*\*4** Although claims one and four of the '885 patent contain recitations about concealability, the prosecution history demonstrates that this language does not make these claims method of use claims. Specifically, the prosecution history shows that the Examiner initially rejected all of the application's claims based on U.S. Patent No. 4,089,195 (Lai), which discloses a stun device in handcuffs. In response, RACC attempted to establish patentability of its claims over Lai based solely on intended use:

By contrast the applicants' device can be worn comfortably by the prisoner without restriction of the prisoner's freedom of movement and without the need for the prisoner's restraint becoming noticeable to even the closest observer.

The Examiner rejected RACC's argument, however, and again rejected the claims based on Lai, noting that the concealability of the apparatus did not change the fact that the claims did not recite any structure different from Lai. Accordingly, RACC then amended its claims to recite structural differences from Lai, namely, a belt of sufficient length to fasten around the torso. With the addition of this structural limitation, the Examiner allowed the claims.

This prosecution history shows that RACC was unable to distinguish its invention from the prior art based solely on intended use. Only by adding the structural limitation requiring torso mounting did RACC successfully overcome the prior art. Accordingly, the district court correctly decided that the functional language in claims one and four does not convert them into method of use or hybrid claims.

The claims do, however, recite concealability as a necessary limitation. Claim 1 recites a mounting means "adapted for concealment" while claim 4 recites a "means concealable beneath said appropriate clothing." This functional language limits the scope of these claims to devices that have the *capability* of being concealed. See *Intel Corp.*, 946 F.2d at 832 (Regarding patent claims to an EPROM, "the accused device, to be infringing, need only be capable of operating in the page mode.... [A]ctual page mode operation in the accused device is not required."). The district court

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therefore also correctly construed claims one and four as requiring the capability of being concealed although not requiring concealment in actual use.

Furthermore, the district court correctly construed the apparatus claims to cover an apparatus not "noticeable, observable, or discernible as a prisoner control apparatus." The specification, the prosecution history, and, most importantly, the claims themselves support this reading. The language of claim one is particularly telling. Claim one recites "mounting means ... adapted for concealment ... *to prevent said prisoner from being marked* by observers in said social context as a person under restraint." '885 patent, col. 9, 11, 1-5 (emphasis added). Thus, this language emphasizes a mounting means adapted for concealment in a courtroom setting. The specification of the '885 patent further clarifies that this language provides "means for control of dangerous prisoners in public trial ... *without the stigma of visible restraints* so as to enable the restrained accused to appear as a normal, ordinary member of society." *Id.* at col. 3, 11, 15-19. Furthermore, during prosecution of the '885 patent, RACC stated that its belt would allow a prisoner's freedom of movement, "*without the need for the prisoner's restraint becoming noticeable* to even the closest observer." (emphasis added). These defining statements support the district court's conclusion that the concealment limitations specify an apparatus not "noticeable, observable, or discernible as a prisoner control apparatus." The district court correctly determined that these claims require only that an ordinary observer would not identify the apparatus as a prisoner control device when worn under ordinary clothing. The district court therefore appropriately concluded that the noticeable bulge under the clothing when the accused device is secured to a prisoner's torso does not remove the accused device from the proper scope of the claims.

**\*\*5** Stun-Tech challenged the district court's grant of summary judgment of infringement solely on the district court's alleged error in claim construction. Stun-Tech did not show that a genuine issue of material fact precludes summary judgment. Because this court agrees with the district court's claim construction, and because this court further agrees with the district court that no genuine issue of material fact bars the grant of summary judgment of

infringement, the decision of the district court is affirmed.

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Briefs and Other Related Documents (Back to top)

- 1998 WL 34098106 (Appellate Brief) Reply Brief for Appellants Stun-Tech, Inc. and Dennis Kaufman (Jun. 26, 1998) (Appellate Brief) Reply Brief for Appellants Stun-Tech, Inc. and Dennis Kaufman (Jun. 26, 1998) Original Image of this Document (PDF)

- 1998 WL 34098110 (Appellate Brief) Brief for Appellees R.A.C.C. Industries, Inc., Carl W. Roy, II and Brian D. Willoughby (Jun. 10, 1998) (Appellate Brief) Brief for Appellees R.A.C.C. Industries, Inc., Carl W. Roy, II and Brian D. Willoughby (Jun. 10, 1998) Original Image of this Document with Appendix (PDF)

- 1998 WL 34098111 (Appellate Brief) Brief for Appellants Stun Tech, Inc. and Dennis Kaufman (Apr. 13, 1998) (Appellate Brief) Brief for Appellants Stun Tech, Inc. and Dennis Kaufman (Apr. 13, 1998) Original Image of this Document with Appendix (PDF)

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creditor." *Id.* If notice of a non-judicial foreclosure sale is properly given and the United States consents to the sale, the sale divests the property of the government lien. 26 U.S.C.A. § 7425(c)(2). Even when the United States does not consent, proper notice gives effect to local law, which, in most cases, operates to discharge the junior liens. 26 U.S.C.A. § 7425(b)(2). The survival (not the elevation) of inferior federal tax liens is the penalty Congress intended to impose on senior lienholders who fail to give the presale notice prescribed by section 7425. See *First Am. Title Ins. Co.*, 848 F.2d at 972-73. This penalty allows the IRS to maintain the status quo of its lien, as well as benefit from future increases in the value of the property.

#### *Priority of Liens*

[6] Having determined that both the Tompkins lien and the IRS lien continue following the foreclosure sale, we return to federal law to determine the priority of those interests. See *Rodgers*, 461 U.S. at 683, 103 S.Ct. at 2137 (citations omitted). According to the Federal Tax Lien Act, the former senior lien remains superior because it was properly perfected under state law before the IRS lien. 26 U.S.C.A. § 6323(a), (h)(1); see also *Aetna Ins. Co. v. Texas Thermal Indus., Inc.*, 591 F.2d 1035, 1038 (5th Cir.1979) (per curiam).

We therefore hold as a matter of law that Tompkins' lien survived his purchase at the non-judicial foreclosure sale, although he failed to give notice to the IRS before the sale. Furthermore, Tompkins' lien retains its priority over the federal tax lien, and the government was properly enjoined from levying on and selling the real property in question.

The district court is **AFFIRMED**.



**INTEL CORPORATION, Appellant,**

v.

**U.S. INTERNATIONAL TRADE  
COMMISSION, Appellee,**

and

**Atmel Corporation, General Instrument  
Corporation and Microchip Technology  
Incorporated, Hyundai Electronics In-  
dustries Co., Ltd., and Hyundai Elec-  
tronics America, Inc. and SEEQ Tech-  
nology, Inc., Intervenor-Appellees.**

**ATMEL CORPORATION, Appellant,**

v.

**U.S. INTERNATIONAL TRADE  
COMMISSION, Appellee,**

and

**Intel Corporation and SEEQ Technol-  
ogy, Inc., Intervenor-Appellees.**

**GENERAL INSTRUMENT CORPORA-  
TION and Microchip Technology  
Incorporated, Appellants,**

v.

**U.S. INTERNATIONAL TRADE  
COMMISSION, Appellee,**

and

**Intel Corporation and SEEQ Technol-  
ogy, Inc., Intervenor-Appellees.**

**Nos. 89-1459, 89-1476 and 89-1534.**

**United States Court of Appeals,  
Federal Circuit.**

**Sept. 17, 1991.**

**Rehearing Denied Oct. 24, 1991.**

Cross appeals were taken from an order of the United States International Trade Commission which prohibited the defendants from importing certain erasable programmable read-only memories (EPROMs) found to infringe one or more of the patent holder's United States patents. The Court of Appeals, Archer, Circuit Judge, held that: (1) cross-licensing agreement between a patent holder and a licensee granting licensee the right to make, use and sell any products bearing licensee's

name under the patent holder's patents did not authorize licensee to manufacture defendant-designed EPROM for the defendant; thus, defendant had no license defense to an infringement claim; (2) Patent No. 4,685,084 relating to circuitry for enabling an EPROM to be programmed selectively was infringed under the doctrine of equivalents; (3) privity existed between inventor and company with which inventor's corporation participated in joint development program so as to estop defendant from challenging validity of patent under doctrine of assignor estoppel; and (4) Patent No. 4,223,394 directed to circuitry designed for increasing the speed at which memory cells of an EPROM can be "read" was infringed.

Affirmed in part, reversed in part, and vacated in part.

#### 1. Patents ⇐216

Cross-licensing agreement between a patent holder and a licensee granting licensee the right to make, use and sell any products bearing licensee's name under the patent holder's patents did not authorize licensee to manufacture defendant-designed erasable programmable read-only memories (EPROM) for the defendant; thus, defendant had no license defense to an infringement claim.

#### 2. Patents ⇐314(5)

Whether a particular activity raises beyond-sale bar is a question of law, based on underlying factual considerations. 35 U.S.C.A. § 102(b).

#### 3. Patents ⇐76

"On-sale" bar encourages early disclosure and prevents extension of the statutory patent term. 35 U.S.C.A. § 102(b).

#### 4. Patents ⇐76

A single sale or offer to sell is enough to bar patentability; even free distribution of a prototype may raise the on-sale bar if it is done to solicit a sale. 35 U.S.C.A. § 102(b).

#### 5. Patents ⇐76

Defendant failed to establish that Patent No. 4,685,084 relating to circuitry for

enabling an erasable programmable read-only memory (EPROM) to be programmed selectively was invalid because the EPROMs which embodied the invention were placed on sale more than a year before the application's filing date; while it was "likely" that patent holder's customers received EPROMs before the critical date, defendant failed to prove that by clear and convincing evidence. 35 U.S.C.A. § 102(b).

#### 6. Patents ⇐76

It is not a violation of the on-sale bar to make preparations for the sale of a claimed invention since an actual sale or offer to sell must be proved. 35 U.S.C.A. § 102(b).

#### 7. Patents ⇐237

Patent No. 4,685,084 relating to circuitry for enabling an erasable programmable read-only memory (EPROM) to be programmed selectively was infringed under the doctrine of equivalents.

#### 8. Patents ⇐314(5)

Finding of infringement under the doctrine of equivalents is a factual determination.

#### 9. Patents ⇐237

Doctrine of equivalents does not require a one-to-one correspondence between the accused device and that disclosed in the patent.

#### 10. Patents ⇐16.14

Patent No. 4,519,050 disclosing and claiming a radiation shield for converting a normally erasable programmable read-only memory (EPROM) cell into an unerasable programmable read-only memory cell was not invalid for obviousness. 35 U.S.C.A. § 103.

#### 11. Patents ⇐314(5)

Claim interpretation is a question of law and thus subject to de novo review.

#### 12. Patents ⇐101(2)

Claims are to be interpreted in light of the claim language, the specification, and the prosecution history.

**13. Patents** ⇨235(2)

Patent No. 4,519,050 for a radiation shield for converting a normally erasable programmable read-only memory (EPROM) cell into an unerasable programmable read-only memory cell was infringed.

**14. Patents** ⇨101(4)

Where a specification does not require a limitation, that limitation should not be read from the specification into the claims.

**15. Patents** ⇨202(2)

Assignor estoppel is an equitable doctrine that prevents a patentee who has assigned the rights to a patent from later contending that what was assigned is a nullity; doctrine also bars a similar challenge by any party in privity with the assignor.

**16. Patents** ⇨202(2)

Doctrine of assignor estoppel may be applied in a patent case before International Trade Commission. Tariff Act of 1930, § 337, 19 U.S.C.A. § 1337.

**17. Patents** ⇨202(2), 203

In view of corporation's direct transfer of technology to second company with which it entered into joint development program, continuous involvement of inventor, who was major shareholder and chief executive officer of corporation, in joint development program, inventor's indemnification of second company, and second company's financial involvement in corporation and the joint development program, privity existed between second company and inventor such as to prohibit second company from challenging validity of patent under doctrine of assignor estoppel.

**18. Patents** ⇨235(2)

Patent No. 4,223,394 directed to circuitry designed for increasing the speed at which memory cells of an erasable programmable read-only memory (EPROM) can be "read" was infringed.

**19. Patents** ⇨314(5)

Determination of literal infringement is a question of fact as is the determination of equivalents structure. 35 U.S.C.A. § 112.

**20. Patents** ⇨101(4)

Even if prior art discloses the same or an equivalent structure, claim will not be limited in scope thereby; it is only necessary to determine what is an equivalent to the structure and disclosed in the specification which is performing the function at issue. 35 U.S.C.A. § 112.

**21. Patents** ⇨230, 237, 245(1)

When prior art is considered in the context of the doctrine of equivalents, the purpose is to insure that the patent holder does not obtain a broader right to exclude under that doctrine than could have been obtained from the patent office.

**22. Patents** ⇨237

Although under doctrine of equivalents prior art restricts the extent to which patent protection can be equitably extended beyond the claims to cover an accused device, policies underlying that concept are not served by restricting claim limitations in the same manner.

**23. Patents** ⇨237

Under applicable statute, aids for determining a structural equivalent to the structure disclosed in the patent specification are the same as those used in interpreting any other type of claim language, namely, the specification, the prosecution history, other claims in the patent, and expert testimony. 35 U.S.C.A. § 112.

James J. Elacqua, Arnold, White & Durkee, of Houston, Tex., argued for Intel Corp., appellant in 89-1459 and intervenor-appellee in 89-1476 and 89-1534. With him on the brief were Jack C. Goldstein, Hilary E. Pearson, Timothy N. Trop, Thomas A. Miller, Danny L. Williams, Russell T. Wong, Anne E. Brookes and Richard L. Stanley. Also on the brief was Carl Silverman, Intel Corp., Santa Clara, Cal., of counsel.

Judith M. Czako, Office of the Gen. Counsel, U.S. Intern. Trade Com'n, of Washington, D.C., argued for appellee. With her on the brief were Lyn M. Schlitt, General Counsel, James A. Toupin, Asst. Gen. Counsel and John M. England, Jr.

Robert C. Morgan, Fish & Neave, of New York City, argued for Atmel Corp., appellant in 89-1476 and intervenor-appellee in 89-1459. With him on the brief were Thomas L. Secrest, Wayne M. Kennard and Gerry Ann Fifer.

Stephen B. Judlowe, Hopgood, Calimafde, Kalil, Blaustein & Judlowe, of New York City, argued for General Instrument Corp. and Microchip Technology, Inc., appellant in 89-1534 and intervenor-appellee in 89-1459. With him on the brief were Marvin N. Gordon, Brian P. Murphy and Joel Miller.

James W. Geriak and Thomas J. Morgan, Lyon & Lyon, of Los Angeles, Cal., represented SEEQ Technology, Inc., intervenor-appellee.

Philip J. Mause, Thelen, Marrin, Johnson & Bridges, of Washington, D.C., was on the brief for Hyundai Electronics Industries, intervenor-appellee.

Before ARCHER, Circuit Judge, COWEN, Senior Circuit Judge, and MAYER, Circuit Judge.

ARCHER, Circuit Judge.

Intel Corporation (Intel), Atmel Corporation (Atmel), and General Instrument Corporation and Microchip Technology Incorporated (collectively GI/M) have each filed an appeal from certain aspects<sup>1</sup> of the Opinion (Decision) and Order, issued March 16, 1989, by the United States International Trade Commission (Commission), in *Certain Erasable Programmable Read Only Memories, Components Thereof, Products Containing Such Memories, And Pro-*

*cesses For Making Such Memories*, 12 ITRD 1088 (1989). The Order prohibited Atmel and GI/M (and other parties in that proceeding) from importing into the United States certain Erasable Programmable Read-Only Memories (hereinafter EPROMs)<sup>2</sup> found to infringe one or more of Intel's United States patents.<sup>3</sup> We affirm-in-part, reverse-in-part, and vacate-in-part.

# I

An investigation was begun by the Commission in September 1987, under section 337 of the Tariff Act of 1930, codified as amended at 19 U.S.C. § 1337 (1988), in response to a complaint filed by Intel alleging unfair acts and unfair methods of competition in the importation and sale of certain EPROMs by seven respondents, including Atmel and GI/M. See 19 U.S.C. § 1337(a)(1) (1988).

In the complaint, Intel alleged that the respondents violated section 337 by importing EPROMs which infringed six Intel U.S. product patents and two Intel U.S. process patents (one of which was withdrawn from consideration).<sup>4</sup> Section 337 permits the Commission to exclude from the United States any goods that violate the provisions of that section. 19 U.S.C. § 1337(e)(1). The Commission may also order any party violating section 337 "to cease and desist from engaging in the unfair methods or acts involved." 19 U.S.C. § 1337(f)(1).

The respondents challenged the validity and enforceability of the asserted patents, as well as Intel's allegations of infringement. The investigation was assigned to an administrative law judge (ALJ) who pro-

1. Hyundai Electronics Industries Co., Ltd. also appealed from the ITC's decision on issues unrelated to this appeal. See *Hyundai Elecs. Indus. Co. v. United States Int'l Trade Comm'n*, 899 F.2d 1204, 14 USPQ2d 1396 (Fed.Cir.1990).

2. As stated by the Commission:

[An EPROM] is a monolithic integrated circuit containing thousands of metal oxide semiconductor (MOS) transistor cells on which encoded binary information can be stored.

Decision at 12 (footnote omitted).

3. The patents at issue (the Intel patents) are U.S. Patent Nos. 3,938,108 (the '108 patent); 4,048,518 (the '518 patent); 4,103,189 (the '189 pat-

ent); 4,114,255 (the '255 patent); 4,223,394 (the '394 patent); 4,519,050 (the '050 patent); and 4,685,084 (the '084 patent).

4. Atmel and GI/M manufacture and import EPROMs which have been characterized primarily by their respective memory capacities. Generally speaking, the imported EPROMs are either 256K chips (the 256K EPROMs) or 512K, 513K, and 515K chips (the 51 Series EPROMs). Chips having other memory capacities (64K and 1024K) have been alleged to infringe some of the asserted patents. Only Atmel imports the 64K and the 1024K EPROMs.



duced a 350-page initial determination (ID) detailing the facts and resolving the numerous issues presented by the parties. On review of the ID, the Commission affirmed many of the ALJ's determinations, ordered review of certain portions of the ID, and requested written submissions on

those and other issues. In another prodigious effort, the Commission made 143 pages of additional findings and conclusions. The following table summarizes how the Commission disposed of the validity and infringement issues for each of the Intel patents:<sup>5</sup>

Patent No.	Proved Invalid?	Proved Infringed?			
		64K	256K	51 Series <sup>6</sup>	1024K
'084	No	N/A	N/A	Old <sup>7</sup> —Yes New—No	N/A
'050	No	Yes	Yes	Yes	No
'394	Claim 1—Yes Claim 2—No	Yes	No	Yes	Yes
'255	No	No	No	No	No
'189	No	N/A	Yes	N/A	N/A
'518	No	No	No	No	No
'108	No	No	No	No	No

On the basis of its Decision, the Commission entered a limited exclusion order preventing the importation of, *inter alia*, the EPROMs manufactured abroad by or for Atmel (64K, 256K, 51 Series, and 1024K), and GI/M (256K and 51 Series). Order at 7-8. In addition, the Commission ordered Atmel and GI/M to cease and desist from "importing, selling for importation, assembling, testing, performing manufacturing steps with respect to, using, marketing, distributing, offering for sale, or selling" EPROMs which were determined to be infringing. Decision at 5.

The issues before us on appeal and cross-appeal include: (1) Atmel's claim that its EPROMs are noninfringing because they

are manufactured by Sanyo Electric Co., Ltd. and Tokyo Sanyo Electric Co., Ltd. (collectively Sanyo) under a broad cross-licensing agreement between Sanyo and Intel; (2) Atmel's claim that the '084 patent is invalid; (3) Atmel's and GI/M's challenge to the Commission's finding that their "old" 51 Series EPROM's infringe the '084 patent; (4) Atmel's and GI/M's claim that Intel's '050 patent is invalid and not infringed; (5) GI/M's challenge to the validity of claim 2 of the '394 patent; (6) Intel's argument that GI/M cannot challenge the '394 patent's validity because of the doctrine of assignor estoppel; and (7) Atmel's and GI/M's claim that their EPROMs do not infringe claim 2 of the '394 patent.<sup>8</sup>

5. Although the Commission's Decision also covered other issues in addition to validity and infringement, they have not been appealed.

6. The term "51 Series" appears throughout this opinion to denote Atmel and GI/M 512K, 513K and/or 515K EPROMs, which the parties and the Commission treated as alike.

7. Following Intel's complaint, Atmel and GI/M changed the design of their 51 Series EPROMs in order to avoid infringing the '084 patent. The Commission found that the former 51 Series EPROMs were not identical to the latter 51 Series EPROMs. 946 F.2d—21

ies EPROMs infringed claim 1 under the doctrine of equivalents, but that the modified version did not. Intel does not challenge the finding of noninfringement.

8. We do not reach GI/M's challenge to the Commission's finding that the '189 patent was valid and infringed. Nor do we reach Intel's challenge to the Commission's findings that Intel's '255 patent was not infringed, and that claim 1 of its '394 patent was proven invalid. See discussion, *infra* p. 844; see also *Texas Instruments Inc. v. United States Int'l Trade*

## II

[1] A. Atmel argues that its EPROMs did not infringe any of the Intel patents because the EPROMs were made by Sanyo under Sanyo's cross-licensing agreement with Intel (the Intel/Sanyo agreement). The agreement grants Sanyo the right to make, use and sell "any Sanyo ... products" under Intel's patents. Intel contends that Sanyo is not licensed to manufacture another corporation's goods, *i.e.*, under industry terminology Sanyo may not act as a "foundry." Because Intel licensed only Sanyo products,<sup>9</sup> Intel argues that the cross-license did not authorize Sanyo to manufacture Atmel-designed EPROMs for Atmel, for that would be the manufacture of "Atmel" products rather than "Sanyo" products. The ALJ framed the license defense issue as "whether Sanyo was licensed by Intel to make an Atmel EPROM, using Atmel's design, putting Atmel's name and product designation on the EPROM, and selling the EPROM to Atmel for resale as an Atmel product." ID at 25.

If the Intel/Sanyo agreement permits Sanyo to act as a foundry for another company for products covered by the Intel patents, the purchaser of those licensed products from Sanyo would be free to use and/or resell the products. Such further use and sale is beyond the reach of the patent statutes. *See United States v. Univis Lens Co.*, 316 U.S. 241, 250-52, 62 S.Ct. 1088, 1093-94, 86 L.Ed. 1408 (1942) (the first vending of any article manufactured under a patent puts the article beyond the reach of the patent).

*Comm'n*, 871 F.2d 1054, 1067, 10 USPQ2d 1257, 1267 (Fed.Cir.1989).

9. The cross-licensing agreement between Intel and Sanyo contains the following clauses related to Atmel's defense:

3.5 Intel hereby grants and will grant to Sanyo an [sic] non-exclusive, world-wide royalty-free license without the right to sublicense except to its Subsidiaries, under Intel Patents which read on any Sanyo Semiconductor Material, Semiconductor Device, Magnetic Bubble Memory Device, Integrated Circuit and Electronic Circuit products, for the lives of such patents, to make, use and sell such products.

Section 14.5 of the Intel/Sanyo agreement states that "[t]his Agreement shall be governed by and subject to and construed according to the laws of the State of California." Under California law, the interpretation of a contract is a question of law, to the extent that it is based on the language of the agreement. *Clark v. Rancho Santa Fe Ass'n*, 216 Cal.App.3d 606, 618, 265 Cal.Rptr. 41, 47 (1989); *see also Kern Oil & Refining Co. v. Tenneco Oil Co.*, 840 F.2d 730, 736 (9th Cir.1988). When interpreting a contract, we must, where possible, give meaning and purpose to every term used in the contract. *See, e.g., Beck v. American Health Group Int'l, Inc.*, 211 Cal.App.3d 1555, 1566, 260 Cal.Rptr. 237, 244 (1989) (citing *Jensen v. Traders & General Ins. Co.*, 52 Cal.2d 786, 345 P.2d 1 (1959)); *see also Fortec Constructors v. United States*, 760 F.2d 1288, 1292 (Fed. Cir.1985). In resolving what the parties meant by limiting the license only to Sanyo products, we try to ascertain and give effect to the intent of the parties at the time the contract was signed. *See Moss Dev. Co. v. Geary*, 41 Cal.App.3d 1, 9, 115 Cal.Rptr. 736, 741 (1974); Cal.Civ.Code. §§ 1636, 1641, 1652-53 (1985); *see also Ralden Partnership v. United States*, 891 F.2d 1575, 1577 (Fed.Cir.1989).

In determining that the Intel/Sanyo agreement did not cover foundry rights, the ALJ reasoned:

It is reasonable to assume that the parties meant to exclude parts that one party made as foundry for another company, using the other company's design, parts intended to be sold as the other

3.6 Sanyo hereby grants and will grant to Intel a non-exclusive world-wide, royalty-free, license without the right to sublicense except to its Subsidiaries, under Sanyo Patents which read on any Intel Semiconductor Material, Semiconductor Device, Magnetic Bubble Memory Device, Integrated Circuit and Electronic Circuit products, for the lives of such patents to make, use and sell such products.

3.8 Except as expressly provided herein there are no other licenses, by implication, estoppel or otherwise granted by Intel to Sanyo.

(Emphases added.) [No. 89-1476, Exhibits E13360-61]

company's parts under the other company's name, and not just used as Sanyo components in a larger product made by another company.

The interpretation of the licensing agreement as proposed by Atmel would mean that any company that was unable to obtain a license from Intel but still wanted to make its own parts practicing Intel patents could employ Sanyo as a foundry and circumvent Intel's patents. *Without something to explain why the parties would have intended such a result, the agreement will not be given this strained construction.*

ID at 28 (citation omitted, emphasis added). By not reviewing the ALJ's decision on this issue, the Commission adopted that decision. Commission Rule 210.53(h), 53 Fed. Reg. 33,070 (1988) (codified at 19 C.F.R. § 210.53(h) (1990)).

While there is no indication in the agreement as to what the parties meant by the "Sanyo" limitation, the use of that language in paragraph 3.5 clearly evinces that the parties intended to restrict the grant in some manner.

Atmel argues that the "Sanyo" limitation in paragraph 3.5 was only intended to prevent the transfer of "have made" rights to Sanyo, i.e., to prevent Sanyo from hiring another company to manufacture licensed products for Sanyo. Atmel urges that its interpretation of paragraph 3.5 is supported by a letter containing a summary of the amendments prepared by a member of Intel's negotiating team in connection with a later extension of the Intel/Sanyo agreement. This letter describes the amended agreement as being unchanged insofar as it is a "[g]eneral patent cross license without 'have made' rights."<sup>10</sup> In this connection, Atmel contends that paragraph 3.8 cannot be read as excluding "have made" rights. Further, it argues that if any portion of the contract excludes "have made"

rights, as suggested in the letter, it must be the "Sanyo" limitation in paragraph 3.5. Finally, because the letter expressly states that the agreement excludes "have made" rights and fails to say that foundry rights are similarly excluded, Atmel draws the conclusion that Intel believed its license to Sanyo included foundry rights.

Although the ALJ did not specifically mention the letter,<sup>11</sup> she did fully consider and reject Atmel's arguments regarding the source of the "have made" exclusion. In referring to paragraph 3.8, the ALJ said that neither party intended to rely upon any implied license from Intel to Sanyo and that this provision "prevent[s] any implication of 'have made' rights under the license." ID at 24. Noting that there was no evidence indicating that Intel knew Sanyo might act as a foundry for other unlicensed companies, that Sanyo's license in paragraph 3.5 was world-wide and royalty-free, and that Intel would not receive any further consideration no matter how many companies went to Sanyo for parts that infringed Intel patents, the ALJ posed the hypothetical question: Could Intel have intended that any company in the world could get Sanyo to make its parts without having to get its own license from Intel on Intel's patents? The ALJ's answer was that, in the absence of evidence of any such intent on the part of the parties to the contract, this construction of the license agreement would not be adopted. The ALJ concluded:

The language at issue in the license agreement lends itself to another meaning that is more plausible: that both parties intended that Sanyo and Intel would have the right to make, use and sell their own parts without the constraints imposed by the patent rights of the other party.

....

It seems unlikely that the word "Sanyo" was used here to prevent Sanyo

10. The amended Intel/Sanyo agreement did not change the cross-licensing paragraphs 3.5, 3.6, or 3.8 at issue. Moreover, as in the case of the original Intel/Sanyo agreement, there is no explicit mention of foundry rights.

11. The ALJ may not have mentioned the letter because of its lack of probative value. We have not been given any record references indicating the circumstances under which the letter was prepared, the position and authority of the author and addressees, or the actual distribution of the letter.

from having parts that use Intel patents made for Sanyo by others. The license already prevents the implication of "have made" rights. The use of the word "Sanyo" to impose a restriction against "have made" rights would have been ambiguous and not the customary way to express this restriction.

ID at 27.

We agree that Atmel has not established its license defense to infringement, and that the ALJ's reasoning is persuasive. Moreover, the ALJ's interpretation is consistent with other provisions of the agreement.

The language of paragraph 3.5 grants Sanyo a world-wide, royalty-free license to practice "Intel Patents." The agreement defines the term "Intel Patents" broadly, covering "any and all" patents that Intel "owns or controls," including those of its subsidiaries. The only limitations in paragraph 3.5 are that Sanyo (1) may not sublicense, except to subsidiaries, and (2) may only make, use and sell "Sanyo ... products." Atmel's argument is that the "Sanyo" limitation precludes *only* "have made" rights, and Sanyo otherwise has an unlimited, royalty-free right to practice all Intel patents. Put another way, *anything* manufactured by Sanyo that utilizes *any* Intel patent is subject to the royalty-free license of paragraph 3.5.

Atmel's interpretation, however, tends to create an internal inconsistency in the agreement. Paragraphs 4.3 and 4.4 of the agreement require that Sanyo pay royalties to Intel on the sales of specific Intel chips made by Sanyo and on derivative products

based on those chips, whether developed jointly or by Sanyo. Interpreting paragraph 3.5 as broadly as Atmel desires would encompass these chips and derivative products as royalty-free. For consistency of the agreement as a whole, the words "Sanyo ... products" as used in paragraph 3.5 are properly construed to cover only Sanyo designed and manufactured products and to exclude parts designed by others.

Such a consistent reading precludes the royalty-free, foundry manufacture by Sanyo of an "Atmel EPROM, using Atmel's design, putting Atmel's name and product designation on the EPROM, and selling the EPROM to Atmel for resale as an Atmel product." ID at 25. Atmel had the burden of proving its defense to infringement, *Met-Coil Sys. Corp. v. Korners Unlimited, Inc.*, 803 F.2d 684, 687, 231 USPQ 474, 476 (Fed.Cir.1986), and we are convinced that the Commission properly determined that Atmel failed to do so.

### III

Turning now to the Commission's holdings as to validity and infringement issues, we will consider the Intel patents in the reverse order of issuance.<sup>12</sup>

#### A. The '084 Patent

The '084 patent issued on August 4, 1987, and relates to "circuitry for enabling an EPROM to be programmed selectively for addressing either the full memory array (*i.e.*, in a 'non-page mode') or for addressing the array by 'pages' (*i.e.*, in a 'page mode')." Decision at 79.

refer the Commission to their Post Trial, Main, and Reply Briefs on those patents and incorporate those briefs herein by reference." While the incorporation of previously submitted briefs in a petition for review may not be optimal, it would be unfair to say that GI/M has "knowingly abandoned or waived" the issues related to these patents, *see James v. Federal Energy Regulatory Comm'n*, 755 F.2d 154, 155 (Fed.Cir. 1985), particularly since the Commission accepted GI/M's petition for review and considered and decided the issues therein. Decision at 2. GI/M is entitled to judicial review of the Commission's conclusions.

12. The Commission argues that GI/M's petition to the Commission for review of the ID was defective in that it failed to identify which of the ALJ's findings of fact or conclusions of law were being challenged, as required by Commission rule. *See* 19 C.F.R. 210.54(a)(ii). As a result, the Commission contends that GI/M abandoned these issues below and is not entitled to have this court review them.

We disagree. Clearly GI/M petitioned the Commission for a review of the ALJ's findings on GI/M's alleged infringement of Intel's '084 patent. GI/M's petition also stated "[w]ith respect to five other patents, the '108, '518, '394, '084, '189 and '255 patents, the ... respondents

## 1. Validity of the '084 patent

Atmel<sup>13</sup> argues that the '084 patent is invalid because the 27C512/13 EPROMs which embody the invention were placed on sale more than a year before the application's filing date of June 7, 1985. 35 U.S.C. § 102(b) (1988). Under 35 U.S.C. § 282 a patent is presumed valid, and proof of its invalidity requires "clear and convincing" evidence. *Buildex, Inc. v. Kason Indus., Inc.*, 849 F.2d 1461, 1463, 7 USPQ2d 1325, 1326-27 (Fed.Cir.1988).

It is undisputed that Intel distributed the 27C512/13 EPROMs to its sales force prior to June 7, 1984, the critical, or statutory bar, date, and that the chips were eventually sold to Intel's customers. The sole issue is whether any sales or offers to sell took place before the critical date. *See In re Caveney*, 761 F.2d 671, 676, 226 USPQ 1, 4 (Fed.Cir.1985). The ALJ made the following findings:

[A] sales conference was held in Phoenix, Arizona during the week of May 15, 1984. At that meeting 50 samples of the Intel 27C512/13 were distributed to 50 Intel salesmen.

The Intel sales conference in Phoenix was attended only by Intel personnel.... At the Phoenix conference, no sales person was allowed to take more than one 27512/13 [sic] sample.

Each of the samples given to the Intel salesmen at the Phoenix meeting during the week of May 15, 1984, about three weeks before the statutory bar, included the page mode circuit described and claimed in the '084 patent. No restriction was placed on the Intel salesmen as to how they could dispose of the 27C512/13 samples. The salesmen were expected to pass the samples on to their customers.

Intel was seeking commercial advantage by its distribution of 27512 [sic] samples before the critical date. Intel

was trying to catch up with AMD [a competitor] in the marketplace.

... Intel's engineering samples are pre-production samples that are not available for sale. The Intel sales activities at and after the Phoenix meeting were clearly commercial in intent, however, and if it were clear that they occurred before the critical date, they would constitute an on-sale bar under 35 U.S.C. § 102(b). The distribution of the 512/13 samples to Intel customers before the critical date would constitute an on-sale bar against the validity of the patent pursuant to 35 U.S.C. § 102(b), but *respondents did not prove by clear and convincing objective evidence that any of these customers in fact received the part before June 7.*

ID at 236-40 (citations omitted, emphasis added).

The Commission, in agreeing that Atmel had failed to establish the on-sale bar defense, stated:

[We agree] with the ALJ that respondents failed to prove the existence of an invalidating on-sale bar under 35 U.S.C. § 102(b). One would have to *engage in extensive inference drawing* to conclude that Intel's 27C512/513 part was actually sold or offered for sale more than a year prior to the filing of the application that matured into the '084 patent. Such inference drawing does not in the Commission's view rise to the level of clear and convincing evidence. The Commission adopts the ALJ's factual findings and conclusions of law to the extent they are not inconsistent with the Commission's determination.

Decision at 84 (emphasis added).

[2] Whether a particular activity raises the on-sale bar is a question of law, based on underlying factual considerations. *See, e.g., J.A. LaPorte, Inc. v. Norfolk Dredging Co.*, 787 F.2d 1577, 229 USPQ 435 (Fed.Cir.1986); *Shatterproof Glass Corp.*

chips did not infringe that patent.

13. GM/I does not challenge the validity of the '084 patent, although it does argue that its

*v. Libbey-Owens Foods Co.*, 758 F.2d 613, 225 USPQ 634 (Fed.Cir.1985).

[3, 4] The "on-sale" bar encourages early disclosure and prevents extension of the statutory patent term. See *King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 226 USPQ 402 (Fed.Cir.1985). A single sale or offer to sell is enough to bar patentability. *Caveney*, 761 F.2d at 676, 226 USPQ at 4. Even free distribution of a prototype may raise the on-sale bar if it is done to solicit a sale. *Stearns v. Beckman Instruments, Inc.*, 737 F.2d 1565, 222 USPQ 457 (Fed.Cir.1984).

[5] Atmel argues that the ALJ made all the findings necessary to raise the on-sale bar—(1) that the claimed invention was reduced to practice by Intel prior to the critical date; (2) that three weeks before the critical date, Intel gave the EPROMs embodying the claimed invention to salesmen; (3) that these salesmen were expected to distribute the samples to their customers; and (4) that Intel was seeking a commercial advantage by its distribution of samples before the critical date.

[6] Although these findings may go far toward establishing an on-sale bar, they are insufficient, standing alone, for us to conclude that the Commission erred in refusing to find that any 512/13-type EPROMs were actually sold or offered for sale to Intel's customers. The ALJ found that, while it was "likely" that Intel's customers received the EPROMs before the critical date, Atmel had not proven this by clear and convincing evidence. Intel's distribution of the EPROMs to its own sales staff did not constitute a statutory bar. It is not a violation of the on-sale bar to make preparations for the sale of a claimed invention—an actual sale or offer to sell must be proved. 35 U.S.C. § 102(b). See also *UMC Elec. Co. v. United States*, 816 F.2d 647, 2 USPQ2d 1465 (Fed.Cir.1987).

14. GI/M suggests that the issue of whether its "old" design 51 Series EPROMs infringed the '084 patent was mooted by its unilateral decision to stop manufacturing the "old" design EPROMs. We disagree. The Supreme Court has stated that the "[m]ere voluntary cessation of allegedly illegal conduct does not moot a

case; if it did, the courts would be compelled to leave [t]he defendant . . . free to return to his old ways." *United States v. Concentrated Phosphate Export Ass'n, Inc.*, 393 U.S. 199, 203, 89 S.Ct. 361, 364, 21 L.Ed.2d 344 (1968) (quoting *United States v. W.T. Grant Co.*, 345 U.S. 629, 632, 73 S.Ct. 894, 897, 97 L.Ed. 1303 (1953)).

Atmel offered no evidence, direct or circumstantial, showing that Intel made offers or sales before the initial date. All Atmel proved was that such offers or sales may have been "likely." As the Commission pointed out, "[o]ne would have to engage in extensive inference drawing to conclude that Intel's 27C512/513 part was actually sold or offered for sale more than a year prior to the filing of the application." Decision at 84. Clear and convincing evidence has been described as evidence which proves in the mind of the trier of fact "an abiding conviction that the truth of [the] factual contentions are [sic] 'highly probable.'" *Colorado v. New Mexico*, 467 U.S. 310, 316, 104 S.Ct. 2433, 2438, 81 L.Ed.2d 247 (1984) (citation omitted); see also *Bulldex*, 849 F.2d at 1463, 7 USPQ2d at 1326-27. The extensive inferences Atmel would draw from the evidence presented are not the clear and convincing proof required. Thus, Atmel has failed to carry its burden of proof that a sale or offer to sell was made before June 7, 1984. 35 U.S.C. § 282; see also *UMC*, 816 F.2d at 657, 2 USPQ2d at 1472. Accordingly, we affirm the Commission's determination that the '084 patent was not proven to be invalid.

## 2. Infringement of the '084 patent

[7] Before the Commission, Intel alleged that Atmel's and GI/M's "old" design 51 Series EPROMs infringed claims 1-10 of the '084 patent and that their "new" design 51 Series EPROMs infringe claims 1-4. Intel did not assert that any other EPROMs infringed the '084 patent. The ALJ determined that both Atmel's and GI/M's "old" design 51 Series EPROMs infringed claim 1 of the '084 patent under the doctrine of equivalents, but that the "new" design 51 Series EPROMs did not infringe that patent. On review, the Commission affirmed both decisions.<sup>14</sup>

case; if it did, the courts would be compelled to leave [t]he defendant . . . free to return to his old ways." *United States v. Concentrated Phosphate Export Ass'n, Inc.*, 393 U.S. 199, 203, 89 S.Ct. 361, 364, 21 L.Ed.2d 344 (1968) (quoting *United States v. W.T. Grant Co.*, 345 U.S. 629, 632, 73 S.Ct. 894, 897, 97 L.Ed. 1303 (1953)).

The '084 patent discloses an integrated circuit read-only memory with a programmable selection means for selecting alternative addressing modes. Claim 1 of the '084 patent reads:

1. In an integrated circuit, read-only memory having *n* address lines used for accessing *p* words in one addressing mode, an improvement for providing an alternate addressing mode, comprising:

programmable selection means for selecting said alternate addressing mode; storage means for storing at least one signal; an address buffer coupled to one of said *n* address

lines, said buffer also being coupled to said storage means and said programmable selection means, the output of said buffer being controlled by said signal stored in said storage means when said alternate addressing mode is selected,

whereby when said alternate addressing mode is selected said *p* words in said memory may be selected with less than *n* address signals.

In construing this claim, the ALJ stated: The special circuit disclosed in the '084 patent permits the address buffer to accept either input from the storage means or from the address line. (Huber Tr. 4783.) Which one is selected depends on whether page mode addressing has been selected. In non-page mode, the address buffer accepts the signal from the address line. In page mode, the address buffer accepts the signal stored in the latch. (Intel Ex. 15, col. 3, lines 5-18; Huber Tr. 4783.)

The special address buffer disclosed in the patent can perform normal address input signal processing, it can receive the logic signal stored in the latch, it can send a signal derived either from the address input or from the latch input; and it can implement page mode addressing when directed to do so by the pro-

grammable selection means. (Huber Tr. 4782-84.)

ID at 249-50. The ALJ also observed:

Respondents' old '512 parts do not have an *address buffer* coupled to the storage means or latch, as that term has been construed in the patent claims. Instead ... Atmel<sup>[15]</sup> has a multiplexer. The multiplexer does not buffer the signal. It receives multiple signals and selects signals to be passed on to the decoder circuitry depending on whether the part is programmed for page mode or normal addressing. (Gust Perlegos Tr. 5064-65; Atmel Ex. 220.)

ID at 257 (emphasis in original).

Atmel's and GI/M's primary argument is that the accused device has no component which corresponds to the claimed "address buffer." The ALJ's findings make this argument unpersuasive. While it is true that the accused EPROMs use a multiplexer rather than an address buffer, the ALJ determined that the address buffer of the '084 patent contains additional circuitry to permit it to accept input from alternative sources and that this same function was performed in the accused device by a multiplexer. The ALJ expressly found that the "multiplexer ... is the functional equivalent of the special address buffer as it is described in the '084 patent specification." ID at 259. Moreover, the ALJ found that the buffering function performed by the special address buffer of the '084 patent was performed in the accused EPROMs "in another circuit" before being stored in the latch. ID at 259. The ALJ's findings were stated as follows:

The respondents' 27C512/513/515 parts using the old designs contain each element required by claim 1 of the '084 patent except the special address buffer. The do not literally infringe claims 1-10 of the '084 patent. The fact that a buffer circuit selects which signals are sent to the decoder in the embodiment in the patent does not mean that the use of a buffer circuit is a significant part of the

the ALJ and the Commission dealt only with that device.

15. GI/M agreed before the Commission that Atmel's "old" design 512K EPROM was representative of their accused devices. Accordingly,

invention and that nothing else can perform that function.

ID at 258-59. Based on these findings, the ALJ concluded that the accused EPROMs perform substantially the same function in substantially the same way to achieve substantially the same result. The Commission affirmed this conclusion, stating:

Both the multiplexer and the address buffer use an addressing signal to select a particular memory cell from an incoming address pin or latch. Thus, the accused circuits infringe claim 1 under the doctrine of equivalents because they perform substantially the same function in substantially the same way to obtain the same result as the invention claimed in the '084 patent.

Decision at 87.

[8,9] A finding of infringement under the doctrine of equivalents is a factual determination. *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 936, 4 USPQ2d 1737, 1741 (1987) (in banc). We review the Commission's factual findings under the substantial evidence standard. *SSIH Equip. S.A. v. United States Int'l Trade Comm'n*, 718 F.2d 365, 371-372, 218 USPQ 678, 684 (Fed. Cir. 1983). The doctrine of equivalents does not require a one-to-one correspondence between the accused device and that disclosed in the patent. In *Corning Glass Works v. Sumitomo Electric U.S.A., Inc.*, 868 F.2d 1251, 9 USPQ2d 1962 (Fed. Cir. 1989), we held that infringement under the doctrine of equivalents may be established even though the accused device requires a number of components to perform functions which the patented invention achieves by use of one component. "[T]he determination of equivalency is not subject to . . . a rigid formula. An equivalent must be found for every limitation of the claim somewhere in an accused device, but not necessarily in a corresponding component, . . ." *Id.* at 1259, 9 USPQ2d at 1968 (footnote omitted).

In the hearings, the operation of both the patented invention and the allegedly infringing device were discussed at length by the witnesses. There was testimony fully supporting the ALJ's findings that the mul-

tiplexer performed the selective signal acceptance function of the claimed address buffer and that, while the multiplexer did not act as a buffer, that function was performed elsewhere in the accused EPROMs. Accordingly, we cannot say that the ALJ's and the Commission's findings that the "old" 51 Series EPROMs infringed the '084 patent under the doctrine of equivalents were not supported by substantial evidence.

GI/M also contends that the Commission's finding of infringement under the doctrine of equivalents is incorrect because, although GI/M's "old" design 51 Series EPROMs are capable of performing page mode addressing, the EPROMs were never sold to operate in page mode. No customer was ever told how to convert the chip to page mode operation—or even that such conversion was possible. GI/M argues that an alleged infringer must intend its parts to be used in an infringing fashion and cites *Fromberg, Inc. v. Thornhill*, 315 F.2d 407, 415, 137 USPQ 84, 89 (5th Cir. 1963), in support of its argument. As noted by Intel, there is no intent element to direct infringement. See 35 U.S.C. § 271(b) and (c). *Fromberg* deals with induced and contributory infringement and is therefore inapposite. Because the language of claim 1 refers to "programmable selection means" and states "whereby when said alternate addressing mode is selected" (emphases added), the accused device, to be infringing, need only be capable of operating in the page mode. Contrary to GI/M's argument, actual page mode operation in the accused device is not required.

GI/M contends further that the Commission's finding of infringement is flawed because Intel's expert witnesses failed to opine in terms of the three-part test for the doctrine of equivalents. See *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 607, 70 S.Ct. 854, 855-56, 94 L.Ed. 1097 (1950); *Pennwalt*, 833 F.2d at 934, 4 USPQ2d at 1739. This argument is meritless.

Unlike a jury in a district court case, the Commission resolves disputes involving



patent infringement matters with some regularity and thus is aware of doctrine of equivalents jurisprudence. More importantly, in this case the Commission demonstrated its awareness of the three-part test and applied it to facts here involved. The Commission expressly recited its conclusions in terms of the function, way, and results of the claimed invention and the accused devices. See Decision at 87 (quoted *ante* at p. 832). Under these circumstances, it is unimportant that the testimony before the Commission, which fully supports the Commission's analysis, was not given in the precise function/way/result terminology of *Graver Tank*.

Thus, we are not persuaded that the Commission erred in affirming the ALJ's determination that GI/M's "old" design 51 Series EPROMs infringed claim 1 of the '084 patent under the doctrine of equivalents.

#### B. The '050 Patent

The '050 patent, entitled "Radiation Shield For An Integrated Circuit Memory With Redundant Elements," issued on May 21, 1985. The '050 patent discloses and claims a radiation shield for converting a normally erasable EPROM cell into a *Un*-erasable Programmable Read-Only Memory (UPROM) cell. ID at 191-92. A radiation shield is essentially a cover and side walls which surround the cell, protecting it from ultraviolet radiation. Claims 1-4 of the '050 patent are as follows:

1. In a metal-oxide-semiconductor (MOS) electrically programmable read only-memory (EPROM) which is fabricated on a substrate and which is erased when exposed to radiation, an improvement comprising:

redundant elements to be used in place of defective elements;

a programming means for programming said redundant elements so as to cause said redundant elements to be used in place of said defective elements, said programming means including at least one EPROM cell which is erased when exposed to radiation; and

a shielding member comprising an upper cover and upstanding members extending from said upper cover to said substrate disposed about said EPROM cell which causes radiation incident on said memory to be attenuated before striking said EPROM cell thus inhibiting said EPROM cell from being erased when said memory is exposed to radiation;

whereby said EPROM cell can be permanently programmed so that said redundant elements are always used in place of said defective elements.

2. The memory of claim 1 wherein said shielding member is disposed over the surface of said EPROM cell and extends normally into said EPROM cell at the edges of said EPROM cell so as to make contact with said substrate.

3. The memory of claim 2 wherein said shielding member is a conductor which defines an opening above the substrate so as to allow conductors connected to said EPROM cell to pass through said opening, said opening formed such that radiation entering said opening must traverse at least one angle of approximately 90 degrees before reaching source and drain regions of said cell.

4. The memory of claim 3 wherein said shielding member is connected to a diffusion region formed in said substrate, said diffusion being common with said EPROM cell so as to reduce the number of said conductors passing through said opening.

An EPROM which was manufactured with a defective cell in the memory array generally was discarded because there was no way to keep the EPROM from trying to store information in the defective cell. The invention of the '050 patent was directed to shielding otherwise erasable cells in the EPROM from erasure so that they can be permanently programmed to direct information away from any defective memory elements and toward replacement or redundant memory cells. The memory cells in EPROMs are designed to be erased by exposure to ultraviolet radiation so they can be re-used to store new information.

In its complaint to the Commission, Intel alleged that GI/M's and Atmel's 256K and 512K EPROMs, and Atmel's 64K EPROM, contain radiation shields which infringe claims 1-4 of the '050 patent. Atmel and GI/M denied Intel's allegations and countered that the '050 patent's claims were invalid under 35 U.S.C. §§ 103 (obviousness) and 112 (indefiniteness), and were unenforceable for inequitable conduct.

The ALJ determined that the '050 patent was not proven invalid or unenforceable and was infringed by Atmel's and GI/M's accused devices. On review, the Commission modified some of the ALJ's findings and conclusions but, on the whole, affirmed "the ALJ's determination that: (1) respondents had failed to prove by clear and convincing evidence that claims 1-4 of the '050 patent are invalid, and (2) respondents' accused EPROMs ... literally infringe claims 1-4 of the '050 patent." Decision at 74-75.

In this appeal, Atmel and GI/M claim that the invention disclosed in the '050 patent was invalid for obviousness and that the accused EPROMs do not infringe the Intel patent.

#### 1. Validity of the '050 Patent

[10] According to Atmel and GI/M, the first four claims of the '050 patent would have been obvious in light of the prior art and are thus invalid. As discussed earlier, a patent is presumed valid and the party asserting invalidity must overcome this presumption by clear and convincing evidence establishing facts which support the conclusion of invalidity. See *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809, 810, 106 S.Ct. 1578, 1579, 89 L.Ed.2d 817 (1986).

Obviousness is a question of law based on a series of factual determinations, including (1) the scope and content of the prior art, (2) the differences between the art and the claims at issue, (3) the level of

ordinary skill in the art, and (4) any other objective evidence. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 86 S.Ct. 684, 693-94, 15 L.Ed.2d 545 (1966); see also *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1547, 220 USPQ 193, 197 (Fed.Cir.1983). We examine the Commission's factual determinations under the substantial evidence standard, *SSIH*, 718 F.2d at 371-372, 218 USPQ at 684, and then review the holding of nonobviousness *de novo*. See *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1568, 1 USPQ2d 1593, 1597 (Fed.Cir.1987).

In the prosecution of the application that matured into the '050 patent, the claims were rejected as unpatentable over the McKenny article<sup>16</sup> and the Du patent.<sup>17</sup> The McKenny article explained how redundant elements could be used to compensate for defective elements. The Du patent disclosed using a shielding region with erasable memory cells to protect some cells from radiation. When Intel narrowed the claims to include the extension of the shield's side walls down to the substrate, blocking horizontally-traveling radiation, the claim was allowed. The ALJ found that the side walls represent the only difference between the subject matter allowed and that previously rejected. In examining the scope of the prior art, the ALJ considered the Kondo and Katznelson articles,<sup>18</sup> which taught that the use of shielding side walls would reduce the amount of light reaching the cells. The ALJ found, however, that neither of these articles taught that the side walls should extend all the way to the substrate, and that neither of these articles described a method of shielding a circuit thoroughly enough to last for the normal life of an EPROM. Cells protected in the manner described in Kondo and Katznelson eventually erased.

Next, the ALJ found that one with ordinary skill in the art would have some experience with EPROMs and probably would

16. McKenny, "Good Bits Swapped for Bad in 64-Kilobit EPROM," *Electronics*, March, 1980.

17. U.S. Patent No. 4,393,499, issued to Du et al.

18. Kondo et al., *An Erase Model in Double Poly-Si Gate N-Channel FAMOS Devices*, IEEE Trans-

actions on Electron Devices, March 1978, at 369-74; and Katznelson et al., *An Erase Model for FAMOS EPROM Devices*, IEEE Transactions on Electron Devices, Sept. 1980, at 1744-52.

have at least a Bachelor of Science degree in electrical engineering.

Finally, the ALJ examined other evidence of nonobviousness:

The prior art did not teach a shielding structure that adequately protects an EPROM cell from being erased by ultraviolet light for the normal expected life of an EPROM. Some prior art references taught away from the use of EPROM cells to store redundancy address information in an EPROM.<sup>19</sup>

At the time of Folmsbee's invention, others did not believe EPROM cells could be used to store redundancy address information. The inventor himself had doubts, as did his supervisor, Mr. Spaw. ID at 206. The ALJ also found that Atmel did not use this EPROM design until Korsh left Intel and started work at Atmel. During his employment by Intel, Korsh knew of Folmsbee's work and knew that a patent application was pending. Prior to Korsh's arrival, Atmel had tried and failed to design an UPROM, and instead "Atmel relied on inferior polysilicon fuses for storing redundancy address information." ID at 208.

Based on all of these factual findings, none of which are seriously challenged, the Commission concluded, as did the ALJ, that "respondents had failed to prove by clear and convincing evidence that claims 1-4 of the '050 patent are invalid" for obviousness under section 103. Decision at 74-75; see also ID at 209. We agree. While the extension of the sidewalls may seem only a minor advance, it was not an obvious one. The extension of the sidewalls increased the life of an UPROM cell demonstrably, giving it previously unknown practical uses. The evidence shows that the results of extending the sidewalls in the manner

19. A 1982 patent, while teaching the use of a redundancy method similar to that in the '050 patent, assumed that the method could not be used in most EPROMs:

Those skilled in the art will recognize that neither this fuse cell nor the EPROM fuse cell may be used in memory arrays such as EPROMs which have an ultraviolet light erasable window since the application of ultraviolet light through the window will not only erase the information contained in the main memory array but will also erase the redundancy

disclosed in the '050 patent were surprising. Moreover, Atmel itself failed in its attempt to design a UPROM. See *In re Piasecki*, 745 F.2d 1468, 1475, 223 USPQ 785, 790 (Fed.Cir.1984) (failure of others to provide a feasible solution to a longstanding problem is probative of non-obviousness). We conclude that the Commission correctly determined that Atmel and GI/M failed to prove that the invention disclosed in the claims of the '050 patent would have been obvious.

## 2. Infringement of the '050 Patent

[11, 12] Atmel and GI/M also challenge the Commission's finding of infringement, arguing that the Commission improperly construed the claims of the '050 patent.<sup>20</sup> Claim interpretation is a question of law and thus subject to *de novo* review in this court. *Hormone Research Found., Inc. v. Genentech, Inc.*, 904 F.2d 1558, 1562, 15 USPQ2d 1039, 1042 (Fed.Cir.1990); *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 866, 228 USPQ 90, 93 (Fed.Cir.1985). The claims are to be interpreted in light of the claim language, the specification, and the prosecution history. *Hormone Research*, 904 F.2d at 1562, 15 USPQ2d at 1042.

The challenged portion of the claim states:

whereby said EPROM cell can be *permanently programmed* so that said redundant elements are always used in place of said defective elements.

(Emphasis added.)

[13] The Commission construed the claim phrase "permanently programmed" to mean "for the useful lifetime of the EPROM part under normal operating conditions."<sup>21</sup> Decision at 75. Thus, the Com-

programming which has been implemented in the chip.

U.S. Patent No. 4,546,454, col. 8, lines 38-45. See also ID at 207.

20. Atmel and GI/M do not challenge the finding that their EPROMs infringe the '050 patent's claims as interpreted by the Commission.

21. The ALJ read this clause to require that an infringing UPROM cell resist erasure for twenty hours of exposure to ultraviolet light. The Commission held that the twenty-hour figure was

mission concluded that "permanent" is a relative term, meaning that the UPROM cell will not be erased during the normal life span of the EPROM. The Commission found infringement of the '050 patent because the shielded cells of the accused EPROMs would not be erased during the normal life span of the accused EPROMs.<sup>22</sup>

Atmel and GI/M suggest that the Commission's interpretation employs circular reasoning; if the EPROM becomes useless once the UPROM cells fail, then the UPROM cells will always last for the "useful life" of the EPROM. The parties argue that the term "permanently programmed" must mean that the UPROM cells will avoid erasure until the EPROM fails due to reasons *other* than erasure of the UPROM. This argument is unconvincing; it would require that the UPROM cells always be at least as reliable as any other portions of the chip. The '050 patent contains no such limitation.

[14] Alternatively, Atmel and GI/M read the "permanently programmed" clause to require that an infringing UPROM cell must tolerate 300 hours of ultraviolet light exposure without erasing. Although the specification of the '050 patent stated that the *goal* of the invention was an UPROM cell that could withstand 300 hours of ultraviolet light exposure, this limitation is not contained in the claims. "Where a specification does not *require* a limitation, that limitation should not be read from the specification into the claims." *Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 987, 6 USPQ2d 1601, 1605 (Fed.Cir.1988) (citing *Lemelson v. United States*, 752 F.2d 1538, 1551-52, 224 USPQ 526, 534 (Fed.Cir.1985)) (emphasis in original). The claims of the '050 patent state no minimum life span for its shielded UPROM cells, and one should not be read into the claims. The "permanently programmed" limitation only requires that the

improper because it referenced the lifespan of the accused devices.

22. The ALJ found that Intel did not prove infringement by Atmel's 1 megabit design (the 1024k EPROM) because it did not prove how

shielded UPROM cells remain programmed for the normal life of the EPROM.

The Commission's claim interpretation is the only infringement issue raised on appeal. Accordingly, because we conclude that its interpretation is correct, its finding of infringement must stand.

### C. The '394 patent

The '394 patent, entitled "Sensing Amplifier for Floating Gate Memory Devices," issued on September 16, 1980. George Perlegos and Saroj Pathak were the named inventors on the patent, which was assigned to Intel. The '394 patent discloses an EPROM with two specific circuits, one that performs column biasing to limit the voltage swing across an array of memory cells in an EPROM and another that splits the voltage on a dummy cell gate. These circuits are used to increase the speed at which the memory cells can be "read." ID at 149.

The ALJ found that the '394 patent was not proven invalid, and that it was not infringed. The Commission reversed, finding that claim 1 of the '394 patent was invalid for obviousness, and that claim 2 was valid and infringed. Each of the Commission's findings has been challenged in these appeals. The Commission also held that Atmel is prevented from challenging the validity of the '394 patent under the doctrine of assignor estoppel. Intel argues that GI/M, as well as Atmel, is prevented from contesting the validity of the '394 patent by the doctrine of assignor estoppel.

#### 1. Assignor estoppel

[15] Assignor estoppel is an equitable doctrine that prevents a patentee who has assigned the rights to a patent from later contending that what was assigned is a nullity. *Diamond Scientific Co. v. Ambico, Inc.*, 848 F.2d 1220, 1224, 6 USPQ2d 2028, 2030 (Fed.Cir.1988). The doctrine

long that part withstands erasure. ID at 227. The Commission did not review this finding, Decision at 74, and Intel does not challenge this holding.

also bars a similar challenge by any party in privity with the assignor. *Id.*

Intel argued before the ALJ that Atmel could not challenge the validity of the '394 patent because one of the inventors, George Perlegos, a major shareholder and chief executive officer at Atmel, had assigned the patent to Intel. Intel further argued that GI/M was similarly estopped because of the close relationship, discussed below, that George Perlegos and Atmel had with GI/M.

[16] The ALJ concluded that if assignor estoppel were a permissible infringement defense in a Commission proceeding both Atmel and GI/M would be estopped from questioning the patent's validity. The ALJ held, however, that "it is inequitable to use the doctrine of assignor estoppel in any patent case before the Commission." *Id.* at 12. She noted that, if Intel were successful in the Commission action, *all* products that infringe the '394 patent could be denied entry into the United States, including products made by parties not currently before the Commission. She then reasoned that this potential impact on third parties tipped the scale against applying the doctrine of assignor estoppel. *Id.* at 12. Both Atmel and GI/M were thereafter permitted to challenge the validity of the '394 patent.

On review, the Commission correctly concluded that both statutory and case law required that assignor estoppel be considered and applied in section 337 cases. It based this holding on the language of 19 U.S.C. § 1337(c) (1988) that "[a]ll legal and equitable defenses may be presented in all [section 337] cases," and, by analogy, on this court's decision in *Lannom Mfg. Co. v. United States Int'l Trade Comm'n*, 799 F.2d 1572, 1579, 231 USPQ 32, 37, 4 Fed. Cir. (T) 131, 139 (Fed.Cir.1986), where we held that the Commission's public interest responsibilities do not give it an independent duty to determine the validity of a patent where no party made such a challenge. Since George Perlegos was es-

topped from challenging the patent's validity, it was necessary for the Commission to determine whether Atmel or GI/M or both were in privity with George Perlegos and similarly estopped. The Commission used the following test to determine privity:

whether there is an identity of interests between the persons potentially subject to estoppel with respect to the subject matter ... sufficient to warrant, in light of the equities of the situation, placing the corporation or other person in the shoes of the assignor/inventor.

Decision at 23.

The Commission determined that Atmel was in privity with George Perlegos and was therefore estopped to challenge the patent's validity,<sup>23</sup> but that GI/M did not have sufficient contacts with George Perlegos for there to be an "identity of interests." Decision at 25. The Commission, in essence, disregarded the relationship between Atmel and GI/M because it found that Atmel was not George Perlegos' "alter ego." The Commission concluded "we do not believe there is any basis for extending the privity chain in this manner." Decision at 24.

Intel has appealed the Commission's decision that GI/M was not estopped because it was not in privity with George Perlegos. It contends that the Commission's test for privity is unnecessarily narrow. We hold that the Commission erred in failing to apply the doctrine of assignor estoppel to GI/M.<sup>24</sup>

The doctrine of assignor estoppel is applied "to prevent unfairness and injustice." *Diamond*, 848 F.2d at 1224, 6 USPQ2d at 2030. It is an equitable doctrine

["]mainly concerned with the balance of the equities between the parties." Those in privity with the assignor partake of that balance; hence, extension of the estoppel to those in privity is justified.

*Shamrock Technologies, Inc. v. Medical Sterilization, Inc.*, 903 F.2d 789, 793, 14

23. Atmel has not appealed the decision that it was estopped.

24. Because GI/M is estopped to challenge the validity of the '394 patent, we do not consider GI/M's argument that claim 2 of the '394 patent was proven invalid.

USPQ2d 1728, 1732 (Fed.Cir.1990) (citations omitted).

[17] In determining whether GI/M was in privity with George Perlegos, all contacts between GI/M and George Perlegos, direct and indirect, must be considered, including the contacts between Atmel and GI/M. We are convinced the Commission improperly limited its analysis to whether the relationship between George Perlegos and GI/M was enough to find that the two were in privity. It did not adequately consider the part George Perlegos played in creating the joint venture between GI/M and Atmel, under which the two corporations sought to mutually develop EPROM designs and processes.

At the time of the joint development program, George Perlegos owned approximately 40% of Atmel's stock and was the corporation's largest single shareholder. Decision at 23. In his position as president and chief executive officer, he was in charge of Atmel's business and finances. Decision at 23. As part of the Atmel-GI/M agreement, George Perlegos personally indemnified GI/M against patent infringement suits, as he had previously indemnified Atmel in some of its business dealings. ID at 16; Decision at 23. The ALJ found that GI/M would not have agreed to the joint development project without this indemnification. ID at 16. Considering George Perlegos' position at Atmel and the extensive role he played in creating the relationship between Atmel and GI/M, it is apparent that GI/M's dealings with Atmel are also, in substance, dealings with George Perlegos. His ownership and control of Atmel and his personal guarantees to GI/M were crucial to the joint venture between the two corporations.

The evidence further shows that the dealings and relationship between Atmel and GI/M were extensive. Among other things, Atmel transferred many of its EPROM designs and processes to GI/M. Decision at 24-25. The Atmel-GI/M venture

led to the creation of some of the allegedly infringing EPROMs which are the subject of this investigation. Decision at 24. As part of the agreement, Atmel promised to devote "100%" of George Perlegos' time to the venture for an entire year. ID at 16. George Perlegos personally went to Korea to find a company to act as a foundry to produce EPROMs for GI/M and selected Hyundai Electronics Industries Co., Ltd. (Hyundai), where GI/M's allegedly infringing chips were eventually made. ID at 17. Interestingly, the agreement with Hyundai even named Atmel as a "subsidiary" of GI/M. ID at 17.

Moreover, there was a financial relationship between the corporations. The ALJ found that "Atmel was completely dependent on [GI/M] for financing," ID at 17, while the Commission noted that GI/M personnel served on Atmel's board of directors and that GI/M owned Atmel stock. Decision at 24. Finally, not only did George Perlegos personally promise to indemnify GI/M, his brother Gust Perlegos, an executive and major shareholder at Atmel, also executed an indemnification in favor of GI/M. ID at 16.

In spite of these facts, the Commission concluded that George Perlegos and GI/M did not possess an "identity of interests," and thus GI/M was not estopped. The Commission's test is unduly restrictive for an equitable doctrine.<sup>25</sup> We have said that privity depends on the closeness of the relationship based on a balancing of the equities. As this court stated in *Shamrock Technologies*:

Privity, like the doctrine of assignor estoppel itself, is determined upon a balance of the equities. If an inventor assigns his invention to his employer company A and leaves to join company B, whether B is in privity and thus bound by the doctrine will depend on the equities dictated by the relationship between the inventor and company B in light of the act of infringement. *The closer that relationship, the more the equities will*

25. Even under the Commission's restrictive test, a review of all the facts, *i.e.*, considering the joint venture between Atmel and GI/M and the relationship between the inventor and Atmel, as

well as the relationship between the inventor and GI/M, indicates a substantial identity of interests.

*favor applying the doctrine to company B.*

*Shamrock Technologies*, 903 F.2d at 793, 14 USPQ2d at 1732 (emphasis added).

The Commission based its finding of a lack of privity, in part, on the fact that "there is no evidence in the record to suggest that [GI/M] took part in that agreement in order to avail itself of infringing technology." Decision at 24. While this may be true, such an illicit purpose is not necessary to conclude that there was privity between George Perlegos and GI/M. See *Buckingham Prods. Co. v. McAleer Mfg. Co.*, 108 F.2d 192, 44 USPQ 91 (6th Cir.1939) (privity existed even though the corporation was not organized for the purpose of making use of the patented formulae). What is significant is whether the ultimate infringer availed itself of the inventor's "knowledge and assistance" to conduct infringement. *Shamrock Technologies*, 903 F.2d at 794, 14 USPQ2d at 1733 (quoting *Mellor v. Carroll*, 141 F. 992, 994 (C.C.D.Mass.1905) (privity between assignors and others who availed themselves of assignor's knowledge and assistance to conduct infringement)); see also *Climax Lock & Ventilator Co. v. Ajax Hardware Mfg. Co.*, 192 F. 126 (W.D.N.Y.1911) (privity between companies engaged in joint venture to manufacture and market the infringing product). GI/M unquestionably availed itself of the inventor's, and Atmel's knowledge and assistance. The allegedly infringing EPROMs were the product of the Atmel-GI/M joint development program, and the services of George Perlegos were an important component of that program from its inception. Further, the indemnity agreement between George Perlegos and GI/M created a significant relationship between them. Such an indemnification agreement, in other cases, has alone been enough to find privity. See *Urbain v. Knapp Bros. Mfg. Co.*, 217 F.2d 810 (6th Cir.1954); *Weyerhaeuser Timber Co. v. Bostitch, Inc.*, 178 F.Supp. 757, 760-61 (D.R.I.1959). That George Perlegos would take on such a liability demonstrates that he had considerable in-

terest in GI/M's contribution to the joint venture and its production of EPROMs.

In view of (1) Atmel's direct transfer of technology to GI/M, (2) George Perlegos' continuous involvement in the joint development program, (3) George Perlegos' (and his brother's) indemnification of GI/M, and (4) GI/M's financial involvement in Atmel and the joint development program, we must conclude that the balance of the equities requires a finding of privity between GI/M and George Perlegos. As the ALJ noted:

The critical time to determine whether Perlegos was in privity with the other respondents was when Perlegos and the respondents entered into the development agreement. It was at that time that GI acquired rights from Atmel and assumed obligations to Atmel, and became subject to any impediments on Atmel's ability to challenge the patents in issue. Atmel clearly was subject to the impediments preventing Perlegos from challenging the patents.

ID at 16.

Because of its privity with George Perlegos and Atmel, GI/M should not have been allowed to challenge the validity of the '394 patent before the Commission. Thus, we affirm the Commission's holding that claim 2 of the '394 patent was not invalid and deny GI/M's appeal of that holding. Further, because of our determination that GI/M was in privity with the inventor and was improperly permitted to contest the validity of the '394 patent, the Commission's holding that claim 1 of the '394 patent is invalid is vacated.

## 2. Infringement of the '394 patent

[18] The first and second claims in the '394 patent read:

1. An amplifier for sensing the binary state of a first MOS floating gate memory device comprising:

a line coupled to said first device;

a first biasing means coupled to said line for charging said line to a first potential when said first device is in one binary state and for preventing said line from dropping below a second

potential when said first device is in its other binary state;

a second floating gate memory device substantially identical to said first device for providing a reference load;

a biasing circuit coupled to said second device for biasing said second device at a predetermined level;

a second biasing means coupled to said second device for providing a reference potential;

comparator means for comparing potentials, said comparator means coupled to said line and coupled to receive said reference potential; whereby said amplifier senses said binary state of said first device and is quickly able to again sense the binary state of said first device since said line is prevented from discharging by said first biasing means.

2. The amplifier defined by claim 1 wherein said first and second biasing means are substantially identical circuits.

There was no substantive prosecution history of the '394 patent; the claims were allowed as filed. ID at 149.

As previously noted, the invention in the '394 patent is directed to circuitry designed for increasing the speed at which the memory cells of an EPROM can be "read." Typically, a number of memory cells in an EPROM are coupled to a common sensing amplifier through a charged column line. At any given time the column line is coupled to, and attempts to read, a single cell. The column line remains charged if it is coupled to a memory cell which is nonconductive, whereas the column line is discharged if it is coupled to a memory cell which is conductive. The individual binary cells are "read" when the charge on the column line is sensed to determine the state of the cell. The time for each "read cycle" can be decreased by holding the charge on the column line to a relatively small voltage swing. In this way the column line requires less time to be recharged after it is connected to a conductive cell. Accomplishing this desirable effect requires (1) an accurate method of keeping a very narrow swing in voltage on the column line, and (2) a method of testing

or sensing the column line for very small changes in voltage.

The '394 patent discloses a circuit for charging the column line to one level (charged state) and for preventing it from dropping below another level (discharged state) when the column line is coupled to a conductive memory cell. The circuit disclosed in the specification uses two transistors with a specified threshold difference between them to set specific upper and lower voltage swings. ID at 166. As soon as the column line voltage drops from the initial value by 0.1 volt, a transistor provides extra current to the column line, preventing the line from dropping more than another 0.1 volt.

The '394 patent also discloses a second circuit, which is biased at a predetermined level to be used as a reference point. This second line is compared with the column line to determine the binary state of the particular cell to which the latter is coupled. This method of testing the column line is called "balanced sensing." ID at 155. In claim 2 of the '394 patent, substantially identical circuits are on the memory side and on the reference side. The specification showed these circuits to be identical.

The ALJ interpreted the term "first biasing means" narrowly and limited it to the two-transistor method disclosed in the specification. She declined to interpret the claim to allow any equivalent structure to the described biasing means. Cf. 35 U.S.C. § 112, paragraph 6 (1988). She further noted that if the claims were construed to cover the column biasing circuits used in the accused EPROMs those claims would read on the column biasing circuits disclosed in a prior art Intel patent, Patent No. 4,094,012 ('012). The ALJ also found that, if the claims were read to encompass any other biasing circuits, the claims would be unenforceable due to Intel's inequitable conduct in not revealing the existence of the '108 patent to the PTO. ID at 173.

The Commission rejected the ALJ's narrow construction of the means-plus-function limitation in claims 1 and 2. Decision at 58. The Commission also concluded that the limitation in claim 2 "that the first and



second biasing means are substantially identical circuits" was not taught or suggested in the prior art. Moreover, the Commission held that, because the ALJ did not find that Intel intended to mislead the PTO, inequitable conduct had not been established, citing *Kingsdown Medical Consultants, Ltd. v. Hollister, Inc.*, 863 F.2d 867, 876, 9 USPQ2d 1384, 1392 (Fed.Cir. 1988) (partially in banc). Decision at 62. Based on these conclusions, the Commission found that the 27C512 EPROM<sup>26</sup> literally infringed claim 2 of the '394 patent.

[19] Both GI/M and Atmel challenge the Commission's infringement finding. The determination of literal infringement is a question of fact, *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1269-70, 229 USPQ 805, 811 (Fed.Cir.1986), as is the determination of equivalent structure under 35 U.S.C. § 112, paragraph 6, *D.M.I., Inc. v. Deere & Co.*, 755 F.2d 1570, 1575, 225 USPQ 236, 239 (Fed.Cir.1985).

The claims of the '394 patent include means-plus-function limitations. Interpretation of such limitations is governed by 35 U.S.C. § 112, paragraph 6. To meet a means-plus-function limitation literally, an accused device must (1) perform the identical function claimed for the means element, and (2) perform that function using the structure disclosed in the specification or an equivalent structure. *Pennwalt*, 833 F.2d at 934, 4 USPQ2d at 1739; see also *Laitram Corp. v. Reznord, Inc.*, 939 F.2d 1533, 1535-36, 19 USPQ2d 1367, 1369-70 (Fed.Cir.1991); *Durango Assocs., Inc. v. Reflange, Inc.*, 843 F.2d 1349, 1357, 6 USPQ2d 1290, 1295 (Fed.Cir.1988). Atmel and GI/M contend that the accused device does not perform the identical function and, in any event, does not have structure that is equivalent to the structure disclosed in the specification of the '394 patent.

a. Consistent with the claim language, the Commission stated that "[t]he function of the first biasing means [of the claims of the '394 patent] is to charge the memory cell column line to a first potential ... and

to prevent that column line from dropping below a second potential" and to "maintain[] the voltage swing across the column line within a small limited range." Decision at 67-68. After considering the 27C512's first biasing means, and expert testimony, the Commission found that the functions of the biasing means specified in the claim and the accused devices were "identical." Decision at 68.

Atmel and GI/M contend that the first biasing means in the allegedly infringing 27C512 EPROM has only one function, i.e., "quieting" the column line after the voltage fluctuates from reading a memory cell. The asserted difference is merely semantic. The 27C512 circuit "quiets" the line by keeping it charged at or near a specific potential, and this is done to prevent the charge on the line from dropping any more than necessary. ID at 176-177. Although the biasing means specified in the claim has an indicated "low" potential, while the 27C512 does not, this distinction is irrelevant. The first biasing means limitation of the claim was not for the purpose of assisting the column to reach a low potential; it was to limit the decrease in voltage, just as the biasing means on the 27C512 device's circuit limits the decrease in voltage. Atmel and GI/M have failed to show that the Commission's conclusion that the first biasing means limitation reads on the 27C512 EPROM is not supported by substantial evidence. *SSIH*, 718 F.2d at 371-72, 218 USPQ at 684.

b. Next, we consider whether the structure used in accomplishing the biasing function in the 27C512 EPROM is equivalent to the structure described in the specification of the '394 patent. Atmel and GI/M urge that the Commission improperly construed the claims of the '394 patent in view of the specification and the prior art. They argue that a finding of equivalency of structure under section 112, paragraph 6, cannot be made if prior art is considered. To support their argument they cite *Lemelson v. United States*, 752 F.2d 1538, 224

26. The parties agree that Atmel's 27C512 EPROM is representative of all the accused EP-

ROMs except the 27C256.

USPQ 526 (Fed.Cir.1985), *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 6 USPQ2d 1557 (Fed.Cir.1988), *Texas Instruments v. United States Int'l Trade Comm'n*, 805 F.2d 1558, 231 USPQ 833, 5 Fed.Cir. (T) 32 (Fed.Cir.1986), *Loctite*, 781 F.2d 861, 228 USPQ 90, and *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 221 USPQ 929 (Fed.Cir.1984).

*Lemelson*, *ZMI*, *ACS*, and *Loctite* are inapposite because they do not involve means-plus-function claim limitations. Clearly, *Atmel* and *GI/M* have confused equivalence under the doctrine of equivalents with equivalent structure under section 112, paragraph 6. As this court stated in *D.M.I.*, 755 F.2d at 1575, 225 USPQ at 239:

Thus the word "equivalent" in § 112 should not be confused, as it apparently was here, with the "doctrine of equivalents." In applying the doctrine of equivalents, the fact finder must determine the range of equivalents to which the claimed invention is entitled, in light of the prosecution history, the pioneer-nonpioneer status of the invention, and the prior art. It must then be determined whether the entirety of the accused device or process is so "substantially the same thing, used in substantially the same way, to achieve substantially the same result" as to fall within that range. *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 610, 70 S.Ct. 854, 857, 94 L.Ed. 1097, 85 USPQ 328, 330 (1950). In applying the "means plus function" paragraph of § 112, however, the sole question is whether the single means in the accused device which performs the function stated in the claim is the same as or an equivalent of the corresponding structure described in the patentee's specification as performing that function.

See also *Data Line Corp. v. Micro Technologies, Inc.*, 813 F.2d 1196, 1201, 1 USPQ2d 2052, 2055 (Fed.Cir.1987).

In *Johnston v. Ivac Corp.*, 885 F.2d 1574, 1580, 12 USPQ2d 1382, 1386-87 (Fed. Cir.1989), this court also noted that section 112, paragraph 6, operates to limit a claim

from every possible means to those which are "equivalent."

Properly understood section 112 ¶ 6 operates more like the reverse doctrine of equivalents than the doctrine of equivalents because it restricts the scope of the literal claim language.

*Id.* See also *Pennwalt*, 833 F.2d at 934, 4 USPQ2d at 1739 ("section 112, paragraph 6, rules out the possibility that any and every means which performs the function specified in the claim *literally* satisfies that limitation" (emphasis in original)).

[20-22] It is not necessary to consider the prior art in applying section 112, paragraph 6. Even if the prior art discloses the same or an equivalent structure, the claim will not be limited in scope thereby. It is only necessary to determine what is an equivalent to the structure disclosed in the specification which is performing the function at issue. When the prior art is considered in the context of the doctrine of equivalents, however, the purpose is to ensure that the patent holder does not obtain a *broader* right to exclude under that doctrine than could have been obtained from the patent office. See *Wilson Sporting Goods Co. v. David Geoffrey and Assocs.*, 904 F.2d 677, 14 USPQ2d 1942 (Fed.Cir. 1990). Although under the doctrine of equivalents prior art restricts the extent to which patent protection can be equitably extended beyond the claims to cover an accused device, the policies underlying that concept are not served by restricting claim *limitations* in the same manner. Claim limitations may, and often do, read on the prior art, particularly in combination patents.

That all elements of an invention may have been old (the normal situation), or some old and some new, or all new, is however, simply irrelevant. Virtually all inventions are combinations and virtually all are combinations of old elements.

*Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed.Cir.1983).

[23] Thus, under section 112, paragraph 6, the aids for determining a structural equivalent to the structure disclosed in the

patent specification are the same as those used in interpreting any other type of claim language, namely, the specification, the prosecution history, other claims in the patent, and expert testimony. See, e.g., *Symbol Technologies, Inc. v. Opticon Inc.*, 935 F.2d 1569, 19 USPQ2d 1241 (Fed.Cir.1991); *King Instrument*, 767 F.2d at 862, 226 USPQ at 408; *Palumbo v. Don-Joy Co.*, 762 F.2d 969, 975, 226 USPQ 5, 8 (Fed.Cir. 1985); cf. *McGill Inc. v. John Zink Co.*, 736 F.2d 666, 221 USPQ 944 (Fed.Cir.1984).

In *Texas Instruments* this court suggested, in dicta, that there might be some similarities between the equivalence analysis under section 112, paragraph 6, and the application of the doctrine of equivalents. See *Texas Instruments*, 805 F.2d at 1569-71, 231 USPQ at 839-41. That case did not suggest, however, that the prior art should be considered in determining literal satisfaction of a means-plus-function claim limitation.

Atmel and GI/M also contend that their means of controlling the voltage level on the column line is not structurally equivalent to that described in the '394 patent. The Commission reversed the ALJ's finding of non-infringement on the grounds that she had improperly limited the "column biasing means" to the precise two-transistor method disclosed in the specification of the '394 patent and did not consider equivalents to that structure.

The broadest definition of a "biasing" circuit is any circuit that places another circuit "in some condition." ID at 184. The 27C512 uses a transistor in conjunction with a negative feedback circuit to limit the voltage swings on the column line. Thus, the accused device clearly has a "biasing" means.

The Commission found:

Both the claimed and the accused circuits use MOS transistors ... to pull up the column line voltage as it begins to drop and to keep the column line voltage at a minimum level so that the capacitance associated with it does not discharge.

Decision at 69. The Commission found even less difference between the second

biasing means on the claimed and accused devices.

The accused reference cell column biasing circuit differs from the claimed reference cell column biasing circuit only in the sizes and number of the load transistors.

Decision at 69. Finally, the Commission, agreeing with the ALJ, found that the accused device met the limitation in claim 2, i.e., that the first and second biasing circuits in the device are "substantially identical circuits."

Atmel and GI/M offer little to overcome these findings. The main thrust of their argument here mirrors their argument regarding identical function presented above. GI/M, for example, argues "nothing in the accused circuit can establish a second, lower voltage below which the column is prevented from falling" and contends that "the Commission overlooked these clear distinctions." While GI/M's argument points to distinctions that may be clear, the Commission did not find them to be significant. Atmel contends that the first and second biasing circuits on the 27C512 are not substantially similar because the '394 uses a separate biasing circuit to set the "dummy" cell at a voltage lower than that which drives the memory cells, whereas the reference cell on the 27C512 is set to a predetermined level by a separate word line. There was expert testimony offered by both sides on these alleged distinctions, and we cannot say that the Commission's findings were not supported by substantial evidence. Under section 112, paragraph 6, the means used by the accused and claimed devices need not be identical, merely equivalent.

We conclude that the Commission's findings of infringement of claim 2 of the '394 patent must be affirmed.

#### IV

In *Texas Instruments, Inc. v. United States Int'l Trade Comm'n*, 871 F.2d 1054, 10 USPQ2d 1257 (Fed.Cir.1989), we considered whether it was necessary to review the Commission's decision on the validity and infringement of a patent, after the

Commission's exclusion order was found to be fully supported by other, more recently issued patents. As in the case before us, the *Texas Instruments* court was considering a limited exclusion order, directed solely at the parties before it. It concluded:

The Commission's exclusion order is directed only to the Samsung DRAM's involved in this litigation and that order is sustainable on the basis of the '701 patent. There is thus no occasion for us to decide the question of infringement of the '764 patent. We shall therefore vacate the Commission's determination that the Samsung DRAMs do not infringe claims 16, 17, and 19 of the latter patent.

*Id.* at 1067, 10 USPQ2d at 1267. The court also refused to consider the validity and enforceability of another patent since such consideration was unnecessary to support the exclusion order. *Id.* at 1063-64, 10 USPQ2d at 1264. The Commission's determinations relating to these issues were therefore vacated. *Id.*<sup>27</sup>

Following the teaching of *Texas Instruments*, we have considered the questions involving the most recently issued Intel patents in the reverse order of their issue dates. The issues resolved above fully support the scope and duration of the Commission's exclusion order and its cease and desist orders against Atmel and GI/M. We therefore do not need to consider the remaining infringement and validity issues presented by the parties in the three consolidated appeals. Accordingly, we vacate the remaining portions of the Commission's determinations that have been appealed.

To summarize our conclusions:

In Atmel's appeal, No. 89-1476, the Commission's determination that the Intel/Sanyo agreement did not cover Atmel's EPROMs is affirmed. The Commission's determinations that Atmel's "old" 51 Series EPROMs infringed the '084 patent, its 64K, 512K, and 256K EPROMs infringed

the '050 patent, its 64K, 51 Series, and 1024K EPROMs infringed claim 2 of the '394 patent, and that those patents were not proven invalid, are also affirmed. The Commission's exclusion and cease and desist orders are affirmed to the extent consistent with our determinations.

In GI/M's appeal, No. 89-1534, the Commission's determination that GI/M's "old" 51 Series EPROMs infringed the '084 patent, its 256K and 51 Series infringed the '050 patent, and its 51 Series infringed claim 2 of the '394 patent, and that those patents had not been proven invalid, are affirmed. We reverse the Commission's conclusion that GI/M was not estopped from challenging the '394 patent's validity. The Commission's determinations that GI/M has not proven the '189 patent invalid and that GI/M infringed that patent are vacated. The Commission's orders with respect to GI/M are modified by deleting references to the '189 patent and are otherwise affirmed to the extent consistent with our determinations.

In Intel's appeal, No. 89-1459, we vacate the Commission's determination that claim 1 of the '394 patent is invalid. We also vacate the Commission's determinations that neither Atmel nor GI/M infringed the '255 and '108 patents. Intel's appeal of these Commission determinations is dismissed.

#### COSTS

Each party shall bear its own costs.

AFFIRMED-IN-PART, REVERSED-IN-PART, AND VACATED-IN-PART.



27. *But see SSIH Equip. S.A. v. United States Int'l Trade Comm'n*, 718 F.2d 365, 370 n. 8, 218 USPQ 678, 683-84 n. 8, 1 Fed.Cir. (T) 90, 94 n. 8 (Fed.Cir.1983), where this court stated, in dictum, that "[b]y practice, the Commission issues exclusion orders covering several independent bases for exclusion of goods rather than sepa-

rate exclusion orders for each. The multiple based approach was taken here in that goods infringing any *one* of the claims were excluded. Thus, in practical effect, the June 19 order may be thought of as separate orders on each claim." (Emphasis in original).

King argues that the wide disparity in punishments for crimes involving crack cocaine and those involving powder cocaine violates the Constitution's guarantee of equal protection in that it has a discriminatory impact on black persons. King argues that crack cocaine is predominantly used by blacks, and that powder cocaine is predominantly used by whites.<sup>1</sup> Thus, he argues that blacks are punished much more severely for using cocaine than are whites.

The parties agree that the appropriate level of scrutiny is the rational basis test, since King has not alleged a discriminatory intent on the part of Congress. Thus, we apply the rational basis test.<sup>2</sup>

[1, 2] To pass the rational basis test, the legislation must have a legitimate purpose, and it must have been reasonable for lawmakers to believe that the use of the challenged classification would promote that purpose. *Western & Southern Life Insurance Co. v. State Board of Equalization*, 451 U.S. 648, 668, 101 S.Ct. 2070, 2083, 68 L.Ed.2d 514 (1981). We readily conclude that the sentencing scheme in question withstands scrutiny under the rational basis standard. The fact that crack cocaine is more addictive, more dangerous, and can be sold in smaller quantities than powder cocaine is sufficient reason for Congress to provide harsher penalties for its possession. *United States v. Watson*, 953 F.2d 895, 898 (5th Cir.), *cert. denied*, — U.S. —, 112 S.Ct. 1989, 118 L.Ed.2d 586

1. King has presented no evidence to support his claim, although he points to statistics utilized by the Minnesota Supreme Court in *Minnesota v. Russell*, 477 N.W.2d 886 (Minn.1991). In that case, the trial court found that in 1988, 96.6% of all persons charged with possession of cocaine base in Minnesota were black, and that 79.6% of persons charged with possession of powder cocaine were white. For the purposes of argument, we will assume that the statistical data gathered in Minnesota is similar to that which would be found in this circuit.

2. The other circuits that have addressed this issue have applied the rational basis test. See *United States v. Watson*, 953 F.2d 895, 898 (5th Cir.), *cert. denied*, — U.S. —, 112 S.Ct. 1989, 118 L.Ed.2d 586 (1992); *United States v. House*, 939 F.2d 659, 664 (8th Cir.1991); *United States v. Thomas*, 900 F.2d 37, 39 (4th Cir.1990); *United States v. Cyrus*, 890 F.2d 1245, 1248 (D.C.Cir.

(1992). See also *United States v. House*, 939 F.2d 659, 664 (8th Cir.1991); *United States v. Thomas*, 900 F.2d 37, 39 (4th Cir.1990); *United States v. Cyrus*, 890 F.2d 1245, 1248 (D.C.Cir.1989).<sup>3</sup>

AFFIRMED.



In re John R. FRITCH.

No. 91-1318.

United States Court of Appeals,  
Federal Circuit.

Aug. 11, 1992.

United State Patent and Trademark Office, Board of Patent Appeals and Interferences agreed with examiner's conclusion that claimed invention for landscape edging apparatus and method was invalid based on obviousness. Applicant appealed. The Court of Appeals, Edward S. Smith, Senior Circuit Judge, held that fact that prior art could be modified in manner suggested by examiner did not make modification obvi-

1989). See also *United States v. Solomon*, 848 F.2d 156, 157 (11th Cir.1988) (no heightened scrutiny of mandatory minimum sentence for possession of cocaine base with intent to distribute because § 841(b)(1) does not discriminate on the basis of a suspect classification or a fundamental right).

3. King also argues that the state and federal law enforcement agencies engaged in "de facto" sentencing, violating his right to due process. King contends that state criminal charges against him were dismissed in favor of prosecution in federal court, where the sentences for crimes involving crack cocaine are much harsher than in state court. King was charged with violations of both federal and state law. Because he could have been prosecuted in both state and federal court, we cannot conclude that his rights were violated because he was prosecuted only in federal rather than state court.

ous unless prior art suggested desirability of modification.

Reversed.

### 1. Patents $\Rightarrow$ 32

In proceedings before Patent and Trademark Office, examiner bears burden of establishing prima facie case of obviousness based on prior art; patent applicant may then attack examiner's prima facie determination as improperly made out, or applicant may present objective evidence tending to support conclusion of nonobviousness. 35 U.S.C.A. § 103.

### 2. Patents $\Rightarrow$ 16.4, 16.7

Claimed invention for landscape edging apparatus and method was not invalid based on obviousness; mere fact that prior art could be modified in manner suggested by examiner did not make modification obvious unless prior art suggested desirability of modification. 35 U.S.C.A. § 103.

### 3. Patents $\Rightarrow$ 16(1)

It is impermissible to use claimed invention as instruction manual or "template" to piece together teachings of prior art so that claimed invention is rendered obvious and unpatentable. 35 U.S.C.A. § 103.

Charles L. Gholz, Oblon, Spivak, McClelland, Maier & Neustadt, Arlington, Va., argued, for appellant. John R. Fritch, Corpus Christi, Tex., was on the brief.

Jameson Lee, Associate Sol., Arlington, Va., argued, for appellee. With him on the brief was Fred E. McKelvey, Sol. Of counsel was Richard E. Schafer.

Before PLAGER, Circuit Judge, SMITH, Senior Circuit Judge, and RADER, Circuit Judge.

EDWARD S. SMITH, Senior Circuit Judge.

John R. Fritch (Fritch) appeals the 27 February 1991 decision of the Patent and

Trademark Office Board of Patent Appeals and Interferences (Board) affirming-in-part the Examiner's final rejection of the remaining claims in Fritch's application entitled Landscape Edging Apparatus and Method.<sup>1</sup> The Examiner concluded that Fritch's invention would have been obvious to one of ordinary skill in the art and was therefore unpatentable under 35 U.S.C. § 103. The Board, except for allowing claim 28, agreed. The Board's decision is reversed.

### Issue

The issue is whether the Board erred in affirming the Examiner's determination that the prior art references of Wilson and Hendrix rendered the subject matter of Fritch's independent claims 1, 13, 24, and 29 obvious to one of ordinary skill in the art.

### Background

In his final rejection, the Examiner rejected claims 1-24 and 27-30 of Fritch's application as unpatentable for obviousness under 35 U.S.C. § 103. Fritch appealed the final rejection to the Board. The Board affirmed the rejection as to claims 1-24, 29 and 30, entered a new ground of rejection for claim 27, and reversed as to claim 28. The Board agreed with the Examiner that the teachings of the Wilson and Hendrix patents rendered the subject matter of independent claims 1, 13, 24, and 29 obvious to one of ordinary skill in the art. Fritch does not appeal the Board's disposition as to claims 27 and 28, and at oral argument withdrew the appeal as to claim 8. The claims remaining in this appeal are 1-7, 9-24, 29 and 30.

### The Fritch Invention

The invention claimed by Fritch involves a landscape edging device which includes a planar base portion and an upwardly extending retainer portion. The base portion is elongate, thin, flexible and has a planar bottom surface conformable to a varying slope ground surface. One longitudinal

1. Serial No. 06/838,721.

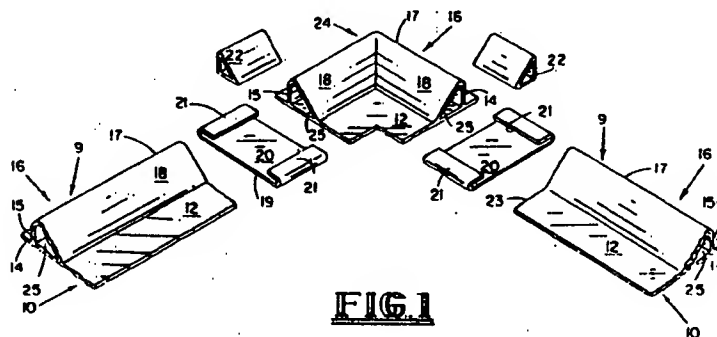
edge of the base portion serves as a mowing strip and the other serves as a retaining flange for landscape fill. The upwardly extending retainer portion is integrally connected (e.g., fused) to the base portion and defines a longitudinally extending enclosed space. The Fritch invention is intended to be used as a retainer for landscape fill in order to separate unmowable landscape fill from the mowable lawn. It may also be used to secure a landscaping sheet to the ground, or to function as guards at the base of a fence. Independent claims 1 and 13 on appeal are representative of the subject matter claimed:

1. A landscape edging strip formed in its entirety of a thin gauge, flexible material and conformable to a ground surface of varying slope, comprising a continuous elongate, thin gauge, flexible base portion having a planar bottom surface conformable to said varying slope ground surface; a thin gauge, elongate retainer portion integral with said base portion and extending upwardly therefrom and transversely thereover to overlie a portion of said base portion; all of said retainer portion defining a longitudinally extending enclosed space; said retainer portion being integrally connected to said base portion adjacent one longitudinal edge of said base portion to define a mowing strip adjacent the other longitudinal edge of said base portion.

13. A landscape edging strip formed in its entirety from thin gauge, flexible material and conformable to a ground surface of varying slope, comprising a continuous elongate, thin gauge, flexible base portion having a planar bottom surface conformable to said varying slope ground surface; a thin gauge, elongate retainer portion integral with said base portion and extending upwardly therefrom and transversely thereover to overlie a portion of said base portion; all of said retainer portion defining a longitudinally extending enclosed space; said retainer portion being integrally connected to said base portion at a transverse location between the longitudinal edges of said base portion, thereby defining a longitudinally extending retaining flange on one side of said retainer portion and a mowing strip on the other side of said retainer portion.

\* \* \* \* \*

The critical language in Fritch's independent claims is that the device is to be, in its entirety, both flexible and "conformable to a ground surface of varying slope". These limitations, although located in the claims' preambles, "are necessary to give meaning to the claim[s] and properly define the invention".<sup>2</sup> Figure 1 from Fritch's drawings is reproduced below:



2. *Perkin Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 896, 221 USPQ 669, 675 (Fed.Cir.

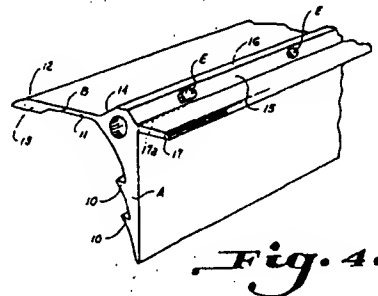
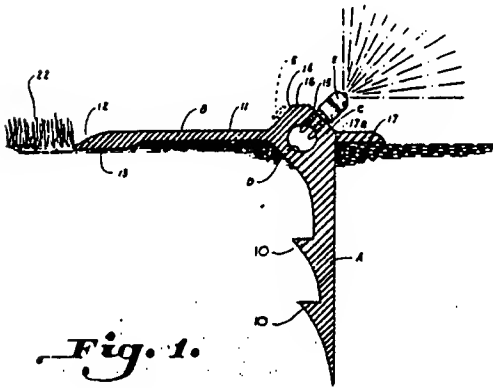
1984).

*The Prior Art*

## a. The Wilson Patent

The Wilson patent relied upon by the Examiner and the Board is entitled "Grass Edging and Watering Device".<sup>3</sup> The embodiment of the Wilson device includes a substantially flat mowing strip extending horizontally from a longitudinally extend-

ing body portion. Opposite the mowing strip is a scored flange which may be broken off when not needed or wanted. Between the mowing strip and the flange, and extending vertically from the body portion is an anchoring leg. Located above the anchoring leg is the body portion which contains a water conduit and sprinkler head assembly. The device is intended to be used adjacent to the borders of walks and plant beds. Figures 1 and 4 from Wilson's drawings are reproduced below:



## b. The Hendrix Patent

The Hendrix patent is entitled "Loose Material Retainer Strip".<sup>4</sup> The Solicitor chose not to discuss the Hendrix reference in his brief, stating that the Board had deemed Hendrix unnecessary to its decision. The Solicitor overstates the Board's position. The Board based its decision upon "a collective evaluation of the Wilson and Hendrix patents". We include Hendrix in our discussion because it did play a role in the rejection of Fritch's independent claims.

The Hendrix device is composed of elongated, flexible strips having substantially C-shaped cross-section. The bottom lip of the device is to be wider than the top lip in order to facilitate fastening the device to the ground. The device will fit most gentle contours, and the top lip will yield laterally to build-up of gravel until the gravel can be redistributed. The concave portion of the strip is installed such that it faces the material to be retained in place. Hendrix contemplates that the retainer will be used

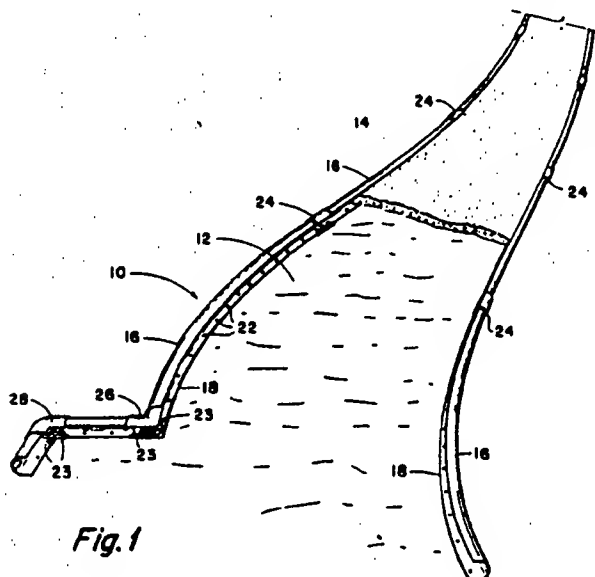
3. U.S. Patent No. 3,485,449.

4. U.S. Patent No. 4,349,596.



in retaining gravel in driveways, lining flower beds, or on the shoulders of asphalt

or concrete highways. Figure 1 of Hendrix's drawings is reproduced below:



#### *Standard of Review*

"[O]bviousness is a question of law to be determined from the facts."<sup>5</sup> The obviousness determination "is based upon underlying factual inquiries concerning the claimed invention and the prior art" which are reviewed for clear error.<sup>6</sup> However, it is the ultimate conclusion of obviousness which the Federal Circuit reviews as a matter of law.<sup>7</sup>

#### *Teachings of Wilson*

Fritch takes exception to the Examiner's findings of fact related to the teachings of the Wilson patent. The Examiner's rejection and the Board's opinion rely heavily on the use of Wilson in view of other references to declare the Fritch invention obvious. The Board states that it agrees with the Examiner's finding of fact regarding the

teachings of Wilson. In the Examiner's answer, which the Board quotes, the Wilson device is described as follows:

Wilson discloses a landscaping edging strip comprising a relatively thin gauge, elongated flexible base portion including a mower strip B having a planar bottom surface conformable to a varying slope surface.

The Board states that the Wilson reference presents "substantial evidence that Wilson is both thin and flexible." The Board regards the Wilson device as teaching that it is flexible and conformable in its entirety. This finding demonstrates clear error.

It is well settled that a prior art reference is relevant for all that it teaches to those of ordinary skill in the art.<sup>8</sup> The base portion of Wilson is not planar in its

5. *In re De Blauwe*, 736 F.2d 699, 703, 222 USPQ 191, 195 (Fed.Cir.1984).

6. *In re Kulling*, 897 F.2d 1147, 1149, 14 USPQ2d 1056, 1057 (Fed.Cir.1990).

7. *In re De Blauwe*, 736 F.2d at 703, 222 USPQ at 195.

8. *Beckman Instruments Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551, 13 USPQ2d 1301, 1304 (Fed.Cir.1989).

entirety, as the Board's opinion suggests, but also includes a prominent anchoring leg to secure the device to the ground. The anchoring leg, which runs the length of the Wilson device, would inhibit longitudinal flexibility of the Wilson device. Indeed, Wilson expressly contemplates flexibility and conformability *only* in the mower strip. Wilson states that its mower strip may be lifted in order to pack dirt thereunder for the purpose of securing the device to the ground. Fritch, on the other hand, is claimed to be flexible in its entirety. The Board's holding that Wilson is flexible in its entirety is based upon a misapprehension of the scope of Wilson's teachings.

Second, Wilson's anchoring leg prohibits conformability to the ground surface in the manner claimed by Fritch. The Examiner's description of Wilson as having a "planar bottom surface conformable to a varying slope surface" is applicable *only* in reference to the mower strip. This description, however, ignores the anchor leg and the fact that it must be placed *into* the ground. Wilson expressly teaches that the anchoring leg may be pushed into soft soils, but in harder terrain a trench is needed in order to place the Wilson sprinkler system. In order to install the Wilson apparatus, the ground surface must be altered to conform to the device rather than, as the Solicitor contends, that Wilson is freely conformable to the ground. Fritch, on the other hand, does not require such extensive alteration of the ground surface in order to install the device.

#### *Prima Facie Obviousness*

[1] In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art.<sup>9</sup> "[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in

9. *In re Piasecki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed.Cir.1984).

10. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed.Cir.1988) (citing *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed.Cir. 1988)).

the art would lead that individual to combine the relevant teachings of the references."<sup>10</sup> The patent applicant may then attack the Examiner's prima facie determination as improperly made out, or the applicant may present objective evidence tending to support a conclusion of nonobviousness.<sup>11</sup>

[2] Fritch has attacked the Board's finding that the Examiner established that Fritch's claimed invention was prima facie obvious in view of the teachings of the prior art. The Board states that "a collective evaluation of the Wilson and the Hendrix patents would have rendered the subject matter of independent claims 1, 13, 24, and 29 obvious to one of ordinary skill." Fritch maintains that there is no teaching, suggestion, or incentive in the prior art to modify or to combine the teachings of the prior art in the manner suggested by the Examiner. We agree.

Wilson teaches a grass edging and watering device which includes an anchoring leg for securing the device to the ground. Wilson contemplates that a trench will need to be dug in order to allow the anchoring leg to be placed into the ground if the condition of the soil requires it. This anchoring leg prohibits flexibility and conformability over the length of Wilson. Any flexibility or conformability in Wilson, which the Board states extends to the entire device, is limited to the mower strip. It is only the mower strip that is mentioned as being flexible in order to aid installation. Hendrix has been cited for its teaching of a flexible retainer strip that is able to conform to the ground surface.

Wilson addresses the problems of arresting growth of grass between areas and watering plants without wetting sidewalks. Wilson lacks any suggestion or incentive to use its water conduit as a landscape retainer since this would arguably result in clogged sprinkler heads.<sup>12</sup> Wilson also

11. *In re Heldt*, 433 F.2d 808, 811, 167 USPQ 676, 678 (CCPA. 1970).

12. This court has previously found a proposed modification inappropriate for an obviousness inquiry when the modification rendered the prior art reference inoperable for its intended pur-

teaches that its mower strip is flexible in order to allow dirt to be packed thereunder. There is no suggestion in Wilson to extend that flexibility to the entire device. Wilson also lacks any teaching or suggestion that one should remove the anchoring leg. Hendrix does not, simply by virtue of its flexible nature, suggest these extensive changes which the Board states are obvious. Neither Wilson nor Hendrix, alone or in combination, provide any incentive to combine the teachings of the prior art in the manner maintained by the Board.

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so."<sup>13</sup> Although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious "modification" of the prior art. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.<sup>14</sup> Wilson and Hendrix fail to suggest any motivation for, or desirability of, the changes espoused by the Examiner and endorsed by the Board.

[3] Here, the Examiner relied upon hindsight to arrive at the determination of obviousness. It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious.<sup>15</sup> This court has previously stated that "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the

pose. *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed.Cir.1984).

13. *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir.1984).

14. *In re Gordon*, 733 F.2d at 902, 221 USPQ at 1127.

15. *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed.Cir.1991). See also *Interconnect*

prior art to deprecate the claimed invention."<sup>16</sup>

### Conclusion

The decision of the Board affirming the Examiner's rejection of independent claims 1, 13, 24, and 29 of Fritch's application as unpatentable over the prior art under 35 U.S.C. § 103 is reversed. Since dependent claims are nonobvious if the independent claims from which they depend are nonobvious, the Board's affirmance of the rejection of dependent claims 2-7, 9-12, 14-23, and 30 is also reversed.<sup>17</sup>

REVERSED.



The UNITED STATES,  
Plaintiff-Appellee,

v.

COMMODITIES EXPORT CO.,  
Defendant-Appellant,

and

Old Republic Insurance Co.,  
Defendant-Appellant.

Nos. 91-1470, 91-1482.

United States Court of Appeals,  
Federal Circuit.

Aug. 11, 1992.

Government brought action to recover unpaid liquidated damages under customs warehouse bond. The United States Court

*Planning Corp. v. Feil*, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed.Cir.1985).

16. *In re Fine*, 837 F.2d at 1075, 5 USPQ2d at 1600.

17. *In re Fine*, 837 F.2d at 1076, 5 USPQ2d at 1600 (citing *Hartness Int'l, Inc. v. Simplimatic Eng'g Co.*, 819 F.2d 1100, 1108, 2 USPQ2d 1826, 1831 (Fed.Cir.1987)). See also *In re Sernaker*, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed.Cir.1983) (when argued together, dependent claims stand or fall with the independent claims from which they depend).

Cite as 837 F.2d 1071 (Fed. Cir. 1988)

nell "assumed the risk of unavailable milling time", and that Connell's contract obligations were not conditioned thereon.

[3] Both the board, and the government in its brief, offer theories as to how Connell might have managed, at whatever cost, to obtain milled rice for timely delivery. These theories, in view of the USDA regulations, are relevant only to the question of whether Connell's failure to perform was "beyond [its] control and without [its] fault or negligence". If the government created the situation that caused or contributed to Connell's late delivery, it can not be held as a matter of law that Connell was required to exceed reasonable efforts in order to compensate for this unwarranted government action.

The government cites *Jennie-O Foods, Inc., v. United States*, 580 F.2d 400, 409-10 (Ct.Cl.1978), which held that "unanticipated economic hardship" did not excuse failure to perform where the contractor had not shown that "the product (healthy turkeys) was unavailable within the boundaries of a reasonable area." There was no issue in *Jennie-O* of governmental contribution to the failure to perform; nor was a theory of strict liability applied. The issues there raised, as here, are fact-dependent, and in *Jennie-O* were fully developed at trial.

[4] Connell must be enabled to develop the facts pertinent to its defense that the government, acting in its sovereign or contractual capacities, contributed to the delay; the extent of that contribution; and whether Connell was at fault or negligent; for these facts are material to the issues of liability, and the extent thereof. The determination must be made as to whether exculpation has been shown under the circumstances. Public policy and the national interest, as well as the principles of contract law, so require. As the Court explained in *United States v. Brooks-Calloway Co.*, 318 U.S. 120, 122, 63 S.Ct. 474, 476, 87 L.Ed. 653 (1943), the purpose of the standard proviso in government contracts that authorizes such relief is:

Thus contractors know they are not to be penalized for unexpected impediments to prompt performance, and, since their

bids can be based on foreseeable and probable, rather than possible hindrances, the Government secures the benefit of lower bids and an enlarged selection of bidders.

Although the government argues that Connell "failed to meet its burden" on summary judgment, the denial of discovery related to this defense contributed to this failure.

REVERSED AND REMANDED.



In re David H. FINE

No. 87-1319.

United States Court of Appeals,  
Federal Circuit.

Jan. 26, 1988.

The Board of Patent Appeals and Interferences of the United States Patent and Trademark Office affirmed rejection of claims of application for patent for system for detecting and measuring minute quantities of nitrogen compounds, and applicant appealed. The Court of Appeals, Mayer, Circuit Judge, held that: (1) it would not have been obvious to substitute nitric oxide detector for sulfur dioxide detector in prior system, and (2) sulfur detection system did not teach use of claimed temperature range.

Reversed.

Edward S. Smith, Circuit Judge, dissented and filed opinion.

#### 1. Patents ¶16.33

System for detecting and measuring minute quantities of nitrogen compounds was not obvious in light of prior art for separating, identifying, and monitoring sulfur compounds or method for measuring chemiluminescence of reaction between ni-

tric oxide and ozone which required continuous flowing of gaseous mixture into reaction chamber; method for measuring sulfur deliberately sought to avoid nitrogen compounds, and claimed invention retained each nitrogen compound constituent of gaseous sample in chromatograph for individual time period. 35 U.S.C.A. § 103.

#### 2. Patents $\Rightarrow$ 114.19, 114.21

Patent and Trademark Office has burden to establish *prima facie* case of obviousness, which it may satisfy only by showing some objective teaching in prior art, or that knowledge generally available to one of ordinary skill and art would lead that individual to combined relevant teachings of references. 35 U.S.C.A. § 103.

#### 3. Patents $\Rightarrow$ 26(1)

Whether particular combination might be "obvious to try" is not legitimate test of patentability. 35 U.S.C.A. § 103.

#### 4. Patents $\Rightarrow$ 16.5

Patent which described preferred temperature range for separating, identifying and quantitatively monitoring sulfur compounds could be distinguished from claimed method for detecting and measuring minute quantities of nitrogen compounds which limited temperature to prevent nitrogen from other sources, where purpose of temperature limitation in prior art was to avoid formation of unwanted sulfides.

Morris Relson, Darby & Darby, P.C., New York City, for appellant. With him on the brief was Beverly B. Goodwin.

Lee E. Barrett, Associate Sol., Office of the Solicitor, Arlington, Va., for appellee. With him on the brief were Joseph F. Nakamura, Sol. and Fred E. McKelvey, Deputy Sol.

Before FRIEDMAN, SMITH and  
MAYER, Circuit Judges.

#### OPINION

MAYER, Circuit Judge.

David H. Fine appeals from a decision of the Board of Patent Appeals and Interfer-

ences of the United States Patent and Trademark Office (Board) affirming the rejection of certain claims of his application, Serial No. 512,374, and concluding that his invention would have been obvious to one of ordinary skill in the art and was therefore unpatentable under 35 U.S.C. § 103. We reverse.

#### BACKGROUND

##### A. The Invention.

The invention claimed is a system for detecting and measuring minute quantities of nitrogen compounds. According to Fine, the system has the ability to detect the presence of nitrogen compounds in quantities as minute as one part in one billion, and is an effective means to detect drugs and explosives, which emanate nitrogen compound vapors even when they are concealed in luggage and closed containers.

The claimed invention has three major components: (1) a gas chromatograph which separates a gaseous sample into its constituent parts; (2) a converter which converts the nitrogen compound effluent output of the chromatograph into nitric oxide in a hot, oxygen-rich environment; and (3) a detector for measuring the level of nitric oxide. The claimed invention's sensitivity is achieved by combining nitric oxide with ozone to produce nitrogen dioxide which concurrently causes a detectable luminescence. The luminescence, which is measured by a visual detector, shows the level of nitric oxide which in turn is a measure of nitrogen compounds found in the sample.

The appealed claims were rejected by the Patent and Trademark Office (PTO) under 35 U.S.C. § 103. Claims 60, 63, 77 and 80 were rejected as unpatentable over Eads, Patent No. 3,650,696 (Eads) in view of Warnick, et al., Patent No. 3,746,513 (Warnick). Claims 62, 68, 69, 79, 85 and 86 were rejected as unpatentable over Eads and Warnick in view of Glass, et al., Patent No. 3,207,585 (Glass).

##### B. The Prior Art.

###### 1. Eads Patent.

Eads discloses a method for separating, identifying and quantitatively monitoring

sulfur compounds. The Eads system is used primarily in "air pollution control work in the scientific characterization of odors from sulfur compounds."

The problem addressed by Eads is the tendency of sulfur compounds "to adhere to or react with the surface materials of the sampling and analytical equipment, and/or react with the liquid or gaseous materials in the equipment." Because of this, the accuracy of measurement is impaired. To solve the problem, the Eads system collects an air sample containing sulfur compounds in a sulfur-free methanol solution. The liquid is inserted into a gas chromatograph which separates the various sulfur compounds. The compounds are next sent through a pyrolysis furnace where they are oxidized to form sulfur dioxide. Finally, the sulfur dioxide passes through a measuring device called a micro-coulometer which uses titration cells to calculate the concentration of sulfur compounds in the sample.

## 2. Warnick Patent.

Warnick is directed to a means for detecting the quantity of pollutants in the atmosphere. By measuring the chemiluminescence of the reaction between nitric oxide and ozone, the Warnick device can detect the concentration of nitric oxide in a sample gaseous mixture.

Warnick calls for "continuously flowing" a sample gaseous mixture and a reactant containing ozone into a reaction chamber. The chemiluminescence from the resulting reaction is transmitted through a light-transmitting element to produce continuous readouts of the total amount of nitric oxide present in the sample.

## 3. Glass Patent.

The invention disclosed in Glass is a device for "completely burning a measured amount of a substance and analyzing the combustion products." A fixed amount of a liquid petroleum sample and oxygen are supplied to a flame. The flame is then spark-ignited, causing the sample to burn. The resulting combustion products are then collected and measured, and from this mea-

surement the hydrogen concentration in the sample is computed.

## C. The Rejection.

The Examiner rejected claims 60, 63, 77 and 80 because "substitution of the [nitric oxide] detector of Warnick for the sulfur detector of Eads would be an obvious consideration if interested in nitrogen compounds, and would yield the claimed invention." He further asserted that "Eads teaches the [claimed] combination of chromatograph, combustion, and detection, in that order.... Substitution of detectors to measure any component of interest is well within the skill of the art." In rejecting claims 62, 68, 69, 79, 85 and 86, the Examiner said, "Glass et al. teach a flame conversion means followed by a detector, and substitution of the flame conversion means of Glass et al. for the furnace of Eads would be an obvious equivalent and would yield the claimed invention." The Board affirmed the Examiner's rejection.

## DISCUSSION

### A. Standard of Review.

Obviousness under 35 U.S.C. § 103 is "'a legal conclusion based on factual evidence.'" *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535, 218 USPQ 871, 876 (Fed.Cir.1983) (quoting *Stevenson v. Int'l Trade Comm'n*, 612 F.2d 546, 549, 204 USPQ 276, 279 (CCPA 1979)). Therefore, an obviousness determination is not reviewed under the clearly erroneous standard applicable to fact findings, *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 956, 220 USPQ 592, 596 (Fed.Cir.1983); it is "reviewed for correctness or error as a matter of law." *In re De Blauwe*, 736 F.2d 699, 703, 222 USPQ 191, 195 (Fed.Cir.1984).

To reach a proper conclusion under § 103, the decisionmaker must step backward in time and into the shoes worn by [a person having ordinary skill in the art] when the invention was unknown and just before it was made. In light of all the evidence, the decisionmaker must then determine whether ... the claimed invention as a whole would have been

obvious at *that* time to *that* person. 35 U.S.C. § 103. The answer to that question partakes more of the nature of law than of fact, for it is an ultimate conclusion based on a foundation formed of all the probative facts.

*Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1566, 1 USPQ2d 1593, 1595-96 (Fed.Cir.1987).

#### B. Prima Facie Obviousness.

Fine says the PTO has not established a *prima facie* case of obviousness. He contends the references applied by the Board and Examiner were improperly combined, using hindsight reconstruction, without evidence to support the combination and in the face of contrary teachings in the prior art. He argues that the appealed claims were rejected because the PTO thought it would have been "obvious to try" the claimed invention, an unacceptable basis for rejection.

[1, 2] We agree. The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. See *In re Pia-secki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed.Cir.1984). It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed.Cir.1984); see also *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 297 n. 24, 227 USPQ 657, 667 n. 24 (Fed.Cir.1985); *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir.1984). This it has not done. The Board points to nothing in the cited references, either alone or in combination, suggesting or teaching Fine's invention.

The primary basis for the Board's affirmation of the Examiner's rejection was that it would have been obvious to substitute the Warnick nitric oxide detector for the Eads sulfur dioxide detector in the Eads system. The Board reiterated the Examiner's bald assertion that "substitution of one type of detector for another in the system of Eads

would have been within the skill of the art," but neither of them offered any support for or explanation of this conclusion.

Eads is limited to the analysis of sulfur compounds. The particular problem addressed there is the difficulty of obtaining precise measurements of sulfur compounds because of the tendency of sulfur dioxide to adhere to or react with the sampling analytic equipment or the liquid or gaseous materials in the equipment. It solves this problem by suggesting that the gaseous sample containing sulfur compounds be absorbed into sulfur-free methanol and then inserted into a gas chromatograph to separate the sulfur compounds.

There is no suggestion in Eads, which focuses on the unique difficulties inherent in the measurement of sulfur, to use that arrangement to detect nitrogen compounds. In fact, Eads says that the presence of nitrogen is undesirable because the concentration of the titration cell components in the sulfur detector is adversely affected by substantial amounts of nitrogen compounds in the sample. So, instead of suggesting that the system be used to detect nitrogen compounds, Eads deliberately seeks to avoid them; it warns against rather than teaches Fine's invention. See *W.L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1550, 220 USPQ 303, 311 (Fed.Cir. 1983) (error to find obviousness where references "diverge from and teach away from the invention at hand"). In the face of this, one skilled in the art would not be expected to combine a nitrogen-related detector with the Eads system. Accordingly, there is no suggestion to combine Eads and Warnick.

Likewise, the teachings of Warnick are inconsistent with the claimed invention, to some extent. The Warnick claims are directed to a gas stream from engine exhaust "continuously flowing the gaseous mixtures into the reaction chamber" to obtain "continuous readouts" of the amount of nitric oxide in the sample. In other words, it contemplates measuring the total amount of nitric oxide in a continuously flowing gaseous mixture of unseparated nitrogen constituents. By contrast, in Fine each

nitrogen compound constituent of the gaseous sample is retained in the chromatograph for an individual time period so that each exits in discrete, time-separated pulses.\* By this process, each constituent may be both identified by its position in time sequence, and measured. The claimed system, therefore, diverges from Warnick and teaches advantages not appreciated or contemplated by it.

[3] Because neither Warnick nor Eads, alone or in combination, suggests the claimed invention, the Board erred in affirming the Examiner's conclusion that it would have been obvious to substitute the Warnick nitric oxide detector for the Eads sulfur dioxide detector in the Eads system. *ACS Hosp. Sys.*, 732 F.2d at 1575-77, 221 USPQ at 931-33. The Eads and Warnick references disclose, at most, that one skilled in the art might find it obvious to try the claimed invention. But whether a particular combination might be "obvious to try" is not a legitimate test of patentability. *In re Geiger*, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed.Cir.1987); *In re Goodwin*, 576 F.2d 375, 377, 198 USPQ 1, 3 (CCPA 1978).

Obviousness is tested by "what the combined teachings of the references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). But it "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *ACS Hosp. Sys.*, 732 F.2d at 1577, 221 USPQ at 933. And "teachings of references can be combined *only* if there is some suggestion or incentive to do so." *Id.* Here, the prior art contains none.

Instead, the Examiner relies on hindsight in reaching his obviousness determination. But this court has said, "To imbue one of ordinary skill in the art with knowledge of

the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *W.L. Gore*, 721 F.2d at 1553, 220 USPQ at 312-13. It is essential that "the decisionmaker forget what he or she has been taught at trial about the claimed invention and cast the mind back to the time the invention was made ... to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art." *Id.* One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

#### C. Advantage Not Appreciated by the Prior Art.

[4] The Board erred not only in improperly combining the Eads and Warnick references but also in failing to appreciate that the appealed claims can be distinguished over that combination. A material limitation of the claimed system is that the conversion to nitric oxide occur in the range of 600°C to 1700°C. The purpose of this limitation is to prevent nitrogen from other sources, such as the air, from being converted to nitric oxide and thereby distorting the measurement of nitric oxide derived from the nitrogen compounds of the sample.

The claimed nitric oxide conversion temperature is not disclosed in Warnick. Although Eads describes a preferred temperature of 675°C to 725°C, the purpose of this range is different from that of Fine. Eads requires the 675°C to 725°C range because it affords a temperature low enough to avoid formation of unwanted sulfur trioxide, yet high enough to avoid formation of unwanted sulfides. Fine's temperature

ous constituents exit at discrete intervals is shown by the specification which was before the Board and which may appropriately be considered on appeal. See, e.g., *Astra-Sjuco, A.B. v. United States Int'l Trade Comm'n*, 629 F.2d 682, 686, 207 USPQ 1, 5 (CCPA 1980) (claims must be construed in light of specification).

\* The Solicitor argues that the contents of Attachment C of Fine's brief were not before the Board and may not properly be considered here. However, we need not rely on Attachment C. It is merely illustrative of the qualitative separation of nitrogen compounds which occurs in Fine's system. The fact that the vari-



range, in contrast, does not seek to avoid the formation of sulfur compounds or even nitrogen compounds. It enables the system to break down the nitrogen compounds of the sample while avoiding the destruction of background nitrogen gas. There is a partial overlap, of course, but this is mere happenstance. Because the purposes of the two temperature ranges are entirely unrelated, Eads does not teach use of the claimed range. See *In re Geiger*, 815 F.2d at 688, 2 USPQ2d at 1278. The Board erred by concluding otherwise.

#### D. Unexpected Results.

Because we reverse for failure to establish a *prima facie* case of obviousness, we need not reach Fine's contention that the Board failed to accord proper weight to the objective evidence of unexpected superior results. *Id.*

#### E. The "Flame" Claims.

Claims 62, 68, 69, 79, 85 and 86 relate to the oxygen-rich flame conversion means of the claimed invention. These "flame" claims depend from either apparatus claim 60 or method claim 77. Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious. *Hartness Int'l, Inc. v. Simplimatic Eng'g Co.*, 819 F.2d 1100, 1108, 2 USPQ2d 1826, 1831 (Fed.Cir.1987); *In re Abele*, 684 F.2d 902, 910, 214 USPQ 682, 689 (CCPA 1982); see also *In re Sernaker*, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed.Cir.1983). In view of our conclusion that claims 60 and 77 are nonobvious, the dependent "flame" claims are also patentable.

#### CONCLUSION

The Board's decision affirming the Examiner's rejection of claims 60, 62, 63, 68, 69, 77, 79, 80, 85 and 86 of Fine's application as unpatentable over the prior art under 35 U.S.C. § 103 is

**REVERSED.**

EDWARD S. SMITH, Circuit Judge,  
dissenting.

I respectfully dissent. I am of the firm belief that the prior art references, relied upon by the PTO to establish its *prima facie* case of obviousness, in combination teach and suggest Fine's invention to one skilled in the art. Also, I firmly believe that Fine failed to rebut the PTO's *prima facie* case. On this basis, I would affirm the board's determination sustaining the examiner's rejection, pursuant to 35 U.S.C. § 103, of Fine's claims on appeal before this court.



**PETROCHEM SERVICES,  
INC., Appellant,**

**v.**

**The UNITED STATES, Appellee.**

**No. 87-1382.**

**United States Court of Appeals,  
Federal Circuit**

**Decided Jan. 26, 1988.**

Government contractor appealed decision of the Armed Services Board of Contract Appeals denying contractor's claim for equitable adjustment of contract to remove oil spilled on naval base. The Court of Appeals, Nichols, Senior Circuit Judge, held that Government's duty to disclose superior knowledge was not legally discharged by Navy supervisor's oral representations, unless contractor's representative heard and understood representations.

Vacated and remanded.

#### 1. United States ¶70(30)

Disclosure of superior knowledge doctrine applies in situations where contractor undertakes to perform without vital knowledge of fact that affects performance costs

income tax refund suit.”<sup>8</sup> Elsewhere, the Court refers to “the portion of appellee’s 1976 income tax liability attributable to the minimum tax imposed by § 56 of the Code on items of tax preference as defined in § 57.” 449 U.S. at 294, 101 S.Ct. at 550. Were this a “close” case, which we do not believe is so, the Court’s dicta would carry the day.

[1, 2] In view of the foregoing, we hold that the minimum tax is an income tax and not an excise tax deductible under sections 162 or 212 of the Internal Revenue Code.

Accordingly, the Claims Court’s order was not erroneous and is *affirmed*.

AFFIRMED.



In re MERCK & CO., INC.

No. 85-2740.

United States Court of Appeals,  
Federal Circuit.

Sept. 8, 1986.

Assignee of patent involving claimed invention of method of treating human depression by oral administration of amitriptyline requested reexamination of patent. The Patent and Trademark Office Board of Patent Appeals and Interferences sustained rejection of pertinent claims in the reexamination application, and assignee appealed. The Court of Appeals, Davis, Circuit Judge, held that: (1) claimed invention was *prima facie* obvious, and (2) alleged unexpected effects did not rebut finding of *prima facie* obviousness.

Affirmed.

Baldwin, Circuit Judge, filed dissenting opinion.

8. We note that in their STATEMENT OF THE CASE appellants, similarly to the Supreme

#### 1. Patents ⇐16.25

Claimed invention of method of treating human depression by oral administration of amitriptyline was *prima facie* obvious over prior art or record, given its structural similarity to imipramine, already used in treatment of depression; one of ordinary skill in medicinal chemical arts would have expected amitriptyline to resemble imipramine in alleviation of depression. 35 U.S.C.A. § 103.

#### 2. Patents ⇐16(3)

Test for determining whether claimed invention of method of treating human depression by oral administration of amitriptyline was obvious was whether references, taken as whole, would have suggested invention to one of ordinary skill in medicinal chemical arts at time invention was made, rather than “obvious to try” standard. 35 U.S.C.A. § 103.

#### 3. Patents ⇐16.25

Prior art teaching that precise structural differences between amitriptyline and imipramine involved known bioisosteric replacement, in combination with teachings that the drugs were closely structurally related and that one would expect similar structures to behave similarly, provided sufficient basis for required expectation of success, in determining that claimed invention of method of treating human depression by oral administration of amitriptyline was obvious, without resort to hindsight, where imipramine was already useful in treatment of depression. 35 U.S.C.A. § 103.

#### 4. Patents ⇐16(1)

Obviousness, as basis for unpatentability, does not require absolute predictability; only reasonable expectation that beneficial result will be achieved is necessary to show obviousness. 35 U.S.C.A. § 103.

#### 5. Patents ⇐16(2)

Nonobviousness, necessary for patentability, cannot be established by attacking

Court in *Darusmont*, recite that this case “involves a suit for refund of income taxes.”

references individually, where rejection is based upon teachings of combination of references. 35 U.S.C.A. § 103.

#### 6. Patents ⇐34

Evidence of contemporaneous invention, in determining patentability of claimed invention of method of treating human depression by oral administration of amitriptyline, although unnecessary, was probative of level of knowledge in art and time invention was made, in determining whether claimed invention was obvious. 35 U.S.C.A. § 103.

#### 7. Patents ⇐36(1)

Prima facie case of obviousness can be rebutted by evidence of unexpected result, in determining invention's patentability. 35 U.S.C.A. § 103.

#### 8. Patents ⇐36(1)

Alleged unexpected properties of amitriptyline, that it had more potent sedative and stronger anticholinergic effect, were not so unexpectantly different from properties of imipramine, closest prior art, as to overcome prima facie showing of obviousness of claimed invention of method of treating human depression by oral administration of amitriptyline. 35 U.S.C.A. § 103.

Charles M. Caruso of Merck & Co., Inc., Rahway, N.J., argued for appellant. With him on brief was Nels T. Lippert, of Fitzpatrick, Cella, Harper & Scinto, New York City. Of counsel were Mario A. Monaco and Michael C. Sudol, Jr., of Merck & Co., Inc., Rahway, N.J.

Richard E. Schafer, Associate Sol., Office of Sol., Arlington, Va., argued for appellee. With him on brief were Joseph F. Nakamura, Sol., and Fred E. McKelvey, Deputy Sol.

1. *Ex Parte Merck and Co.*, Reexamination No. 90/000264, Appeal No. 607-66 (PTO Bd.Pat.App. & Int., May 28, 1985), JA p. 7. In its opinion the Board expressly adopted the reasonings in its earlier reissue (for the '735 patent) opinions, *Ex Parte Edward L. Engelhardt*, Reissue Application No. 776,464, Appeal No. 424-40 (PTO Bd. Pat.App., Apr. 23, 1980), JA p. 13 and *Ex Parte Edward L. Engelhardt*, Reissue Application No.

Donald R. Dunner of Finnegan, Henderson, Farabow, Garrett & Dunner, Washington, D.C., argued for intervenor Biocraft Laboratories, Inc. With him on brief were Robert D. Bajefsky and Carol P. Einaudi of Finnegan, Henderson, Farabow, Garrett & Dunner, Washington, D.C. Of counsel was Beryl L. Snyder, of Biocraft Laboratories, Inc., Elmwood Park, N.J.

Before DAVIS, BALDWIN and ARCHER, Circuit Judges.

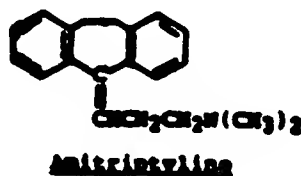
DAVIS, Circuit Judge.

This is an appeal from a final decision of the United States Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences (Board), sustaining the rejection of claims 1 through 3 in the reexamination application<sup>1</sup> of U.S. Patent No. 3,428,735<sup>2</sup> (the '735 patent) as unpatentable under 35 U.S.C. § 103. We affirm.

## I. BACKGROUND

### A. The Invention

The invention is directed to a method of treating human mental disorders; the method involves treating depression in humans by the oral administration of 5-(3-dimethylaminopropylidene)dibenzo[a, d][1, 4] cycloheptadiene (commonly known as and hereafter referred to as "amitriptyline"), or the hydrochloride or hydrobromide salts thereof, in a particular dosage range. Amitriptyline has the following chemical structure:



776,464, Appeal No. 480-01 (PTO Bd.Pat.App., Feb. 25, 1982), JA p. 23.

2. U.S. Patent No. 3,428,735, issued to Edward L. Engelhardt on February 18, 1969, was based on patent application Serial No. 662,907 filed August 24, 1967 as a continuation-in-part of patent application Serial No. 855,981 filed Nov. 30, 1959.

As representative of the invention, claim 1 reads:

1. A method of treating human mental disorders involving depression which comprises orally administering to a human affected by depression 5-(8-dimethylaminopropylidene) dibenzo[a, d][1, 4]cycloheptadiene or its non-toxic salts in daily dosage of 25 to 250 mg. of said compound.

Remaining claims 2 and 3 are dependent from claim 1 and add limitations pertaining to the use of the hydrochloride and hydrobromide salts of amitriptyline, respectively.

### B. Related Proceedings

On March 10, 1977 an application, Serial No. 776,464 (the '464 application), was filed for reissue of the '735 patent.<sup>3</sup> All the claims of the '464 application were finally rejected by the examiner under section 102 of title 35, United States Code, and alternatively under section 103 of that title. Subsequently, an appeal (Appeal No. 424-40) was taken to the Board<sup>4</sup> which affirmed the examiner's rejections. Additionally, the Board entered a new rejection under 35 U.S.C. § 103 over a combination of references not previously cited by the examiner. In accordance with 37 C.F.R. § 1.196(b) (1985)<sup>5</sup>, appellant elected reconsideration of the '464 application by the examiner. The examiner maintained the rejection entered by the Board; in Appeal No. 480-01, the Board affirmed the examiner. The Board's decision was appealed to the Court of Customs and Patent Appeals (CCPA). Upon the motion of the Commissioner of Patents and Trademarks and on the authority of *In re Dien*, 680 F.2d 151, 214 USPQ

10 (CCPA 1982), the appeal was dismissed for lack of subject matter jurisdiction.<sup>6</sup>

The reissue application was protested by Biocraft Laboratories, Inc. (Biocraft), intervenor in the current appeal. Biocraft is also the plaintiff in a related litigation pending in the U.S. District Court for the District of New Jersey in which the validity and infringement of the '735 patent is in issue. See *Biocraft Laboratories Inc. v. Merck & Co.*, Civil Action No. 77-0693 (D.N.J.). The district court has stayed further action in that case pending the final outcome of the pending PTO proceedings.

### C. Reexamination Proceeding

Following dismissal of the reissue appeal by the CCPA, Merck & Co., Inc. (Merck), the assignee of the '735 patent, filed for and was granted a request for reexamination of the patent. As a result of prosecution before the examiner, claims 1 through 3 of the reexamination application were finally rejected under 35 U.S.C. § 102 as anticipated by prior art references; the claims were also rejected under 35 U.S.C. § 103 as being obvious over references cited by the Board in its new ground of rejection entered during the initial reissue appeal. Finding the '735 patent to be entitled to the benefit of the November 30, 1959 filing date of its parent application, Serial No. 855,981, the Board reversed the section 102 rejection because the effective filing date of the application antedated all the references cited therein. The Board, however, sustained the rejection for obviousness under section 103. Expressly adopting the reasonings of its earlier reissue opinions, the Board took the position that in view of the prior art, in combina-

3. The reissue application was filed as a "no defect" type reissue under the then existing 37 C.F.R. § 1.175(a)(4) (1980). That provision has now been repealed.

4. At that time, the Board of Patent Appeals and Interferences was called the Board of Patent Appeals.

5. 37 C.F.R. § 1.196(b) provides that when the Board of Appeals determines a new ground of rejection, the appellant may

(1) after submitting appropriate amendments or showing of facts, have the matter reconsidered by the examiner;

(2) waive reconsideration before the examiner and have the case reconsidered by the Board; or

(3) treat the decision, including the new ground of rejection, as a final decision in the case.

6. See *In the Matter of the Application of Edward L. Engelhardt*, Appeal No. 82-611 (CAFC Oct. 28, 1982) (order granting motion to dismiss).

tion, and a thorough knowledge of the investigative techniques used in the medicinal chemical art, the skilled artisan would have expected the known tricyclic compound, amitriptyline, to be useful as an antidepressant.

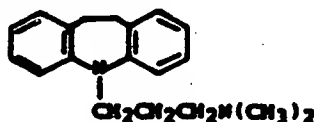
#### D. The References

The references relied upon by the Board were:

- (1) Rey-Bellet et al. (Rey-Bellet) U.S. Patent No. 3,384,663, May 21, 1968 (application filed Mar. 27, 1959);
- (2) Kuhn, *Schweizerische Medizinische Wochenschrift*, Vol. 87, No. 35-36, pp. 1135-1140 (Aug. 1957);
- (3) Lehman et al. (Lehman), *Canadian Psychiatric Association Journal*, "The Treatment of Depressive Conditions with Imipramine (G 22355)", vol. 3, No. 4, pp. 155-164 (Oct. 1958);
- (4) Friedman, *First Symposium On Chemical Biological Correlation*, "Influence of Isosteric Replacements Upon Biological Activity", pp. 296-358 (May 1950);
- (5) Burger, *Journal of Chemical Education*, "Rational Approaches to Drug Structure", Vol. 33, No. 8, pp. 362-372 (Aug. 1956);
- (6) Petersen et al. (Petersen), *Arzneimittel-Forschung*, Vol. 8, No. 7, pp. 395-397 (1958);
- (7) Roche Research Report No. 43,162, pp. 1-9 (Nov. 1957);
- (8) Roche Research Report No. 43,169, pp. 1-8 (Apr. 1958);
- (9) Roche Research Report No. 52,195, pp. 1-13 (Sept. 1958) (collectively called the "Roche Reports").

The Rey-Bellet patent disclosed amitriptyline and its hydrochloride salt. Properties of amitriptyline taught by the reference included a "manifold activity upon the central nervous system," as well as pharmacological and medicinal properties, such as "narcosis-potentiating, adrenolytic, sedative, antihistaminic, antiemetic, antipyretic and hypothermic." Rey-Bellet did not disclose or otherwise teach that amitriptyline possessed antidepressive properties.

The Kuhn publication disclosed the compound, imipramine, and taught that the compound was a very effective antidepressant in humans. Imipramine has the chemical structure



**Imipramine**

and differs from the structure of amitriptyline only in the replacement of the unsaturated carbon atom in the center ring with a nitrogen atom. Kuhn taught a recommended dosage of 75-150 mg per day—possibly 200-250 mg if the smaller doses proved ineffective.

The Lehman publication disclosed the results of a Canadian study of the effects of imipramine on the symptoms of depression in humans. This article confirmed, for the most part, the teachings of the Kuhn article.

The object of the Friedman publication was "to survey the history of isosterism, to classify the varieties of isosteric replacements which are recorded in the literature, and to note the influence of these replacements on the biological activity of compounds." Friedman defined isosteres as atoms, ions or molecules in which the peripheral layers of electrons can be considered identical. Compounds which fit this broad definition and exhibit the same biological activity were termed "bioisosteric." Further, with respect to the medicinal chemists' use of the theory of "isosteric replacement" or "bio-isosteric replacement" as a tool to predict the properties of compounds, Friedman commented that:

[t]o the synthetic organic chemist interested in medicinal chemistry, every physiologically active compound of known structure is a challenge—a challenge either to better it, or perhaps merely to equal it....

There are numerous ways of attacking such a problem.... One of the methods which has been used frequently, very

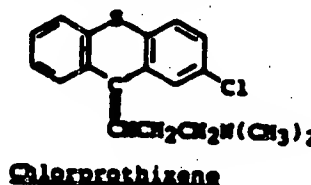
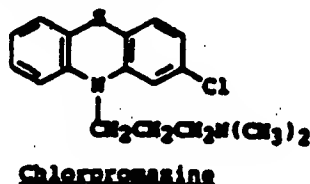
often with success, is that of isosteric replacement. The examples of this type of replacement in the literature are very numerous, and the fruitful results in the fields of sulfonamides, antimetabolites, and antihistamines are well known.

Friedman at page 296. Finally, Friedman disclosed various atoms or groups of atoms as bioisosteric, including the interchange of oxygen and the unsaturated carbon atom which often resulted in similar biological activity. Friedman, however, did not disclose or otherwise teach as bioisosteric the

interchange of the nitrogen and unsaturated carbon atoms.

The Burger publication also discussed the theory of "bioisosterism" and its usefulness in designing new drugs based upon the knowledge of "lead" compounds.

The Petersen publication taught, *inter alia*, the properties of chlorpromazine (a phenothiazine derivative) and chlorprothixene (a 9-amino-alkylene-thioxanthene derivative), these compounds having the following structural formulas:



Petersen concluded that, when the nitrogen atom located in the central ring of the phenothiazine compound is interchanged with an unsaturated carbon atom as in the corresponding 9-amino-alkylene-thioxanthene compound, the pharmacological properties of the thioxanthene derivatives resemble very strongly the properties of the corresponding phenothiazines. Using the theory of isosteric replacement, Petersen predicted this similarity in properties:

Structural chemical considerations permitted the expectation that the 9-amino-alkylene-thioxanthenes ... would show great similarity to the corresponding phenothiazines. They should be more similar in their behavior to that of the phenothiazines than the saturated 9-amino-alkyl-thioxanthenes. From the physical point of view the  $\pi$ -electron distributions (sites of  $\pi$ -electrons) are almost the same in the phenothiazine derivatives and in the 9-aminoalkylene-thioxanthenes with their stabilizing conjugated double linkage between C9 in the thioxanthene ring and the first C-atom of the side chain.

Petersen at page 3. The compounds were disclosed as having a strong central depressive, i.e., tranquilizing, action in animals.

7. Tofranil is a tradename used for imipramine.

The Roche Reports revealed the results from tests comparing the pharmacological properties of amitriptyline and imipramine. The reports indicated that the two compounds were very similar in a variety of properties, including their action as tranquilizers having narcosis-potentiating effects. Because of this similarity and because amitriptyline and imipramine were structurally related, Roche scientists concluded that amitriptyline should be clinically tested for depression alleviation—a known property of imipramine. In the pharmacological guideline for the clinical testings of amitriptyline (which was labelled Roche Preparation Ro 4-1575), the Roche Reports stated that

[i]t is to be noted that a "tofranal-like effect" is already to be expected by using a dose  $\frac{1}{4}$ – $\frac{1}{2}$  that of Tofranil. Side effects which can appear ... are sedative and atropine-like effects, such as appear also with Tofranil.<sup>[7]</sup>

We must decide in this appeal whether appellant's invention would have been *prima facie* obvious over the available prior art of record; and, if so obvious, whether

the prima facie case has been rebutted by evidence of unexpected results.

## II. DISCUSSION

In its opinion on this problem, the Board expressly followed the guidelines of *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 86 S.Ct. 684, 693-694, 15 L.Ed.2d 545, 148 USPQ 459, 466-67 (1966), and made findings on factual inquiries specifically set forth in that decision. These factual findings must be accepted unless they are clearly erroneous. *In re Wilder*, 736 F.2d 1516, 1520, 222 USPQ 369, 372 (Fed.Cir. 1984), *cert. denied*, 469 U.S. 1209, 105 S.Ct. 1173, 84 L.Ed.2d 323 (1985); *In re De Blauwe*, 736 F.2d 699, 703, 222 USPQ 191, 193 (Fed.Cir.1984); *accord Stock Pot Restaurant, Inc. v. Stockpot, Inc.*, 737 F.2d 1576, 1578-79, 222 USPQ 665, 666-67 (Fed. Cir.1984). In this case we do not hold the Board's factual findings—as to the scope and content of the prior art, the differences between the prior art and the claims at issue, and the level of ordinary skill in the art—to be clearly erroneous and accordingly we have followed them in our statement of the prior art and we now follow them in our analysis of the legal issue of obviousness.

[1] *Prima Facie Obviousness*: The prior art taught that amitriptyline and imipramine are both psychotropic drugs which react on the central nervous system and which were known in the art prior to the time of appellant's invention. Imipramine was known to possess antidepressive properties in humans. While amitriptyline was known to possess psychotropic properties such as sedative and narcosis-potentiating properties, the drug was not known to be an antidepressant. However, the prior art has shown that imipramine and amitriptyline are unquestionably closely related in structure. Both compounds are tricyclic dibenzo compounds and differ structurally only in that the nitrogen atom located in the central ring of imipramine is interchanged with an unsaturated carbon atom

in the central ring of amitriptyline. To show obviousness, it was necessary to determine from knowledge already available in the art at the time of appellant's invention that one skilled in the medicinal chemical art would have expected amitriptyline, like imipramine, to be useful in the treatment of depression in humans. *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963).

As found by the Board, the Roche Reports recognized the structural relationship between amitriptyline and imipramine and concluded that amitriptyline should be tested for its antidepressant activities. In fact, the Roche Reports expressly stated that amitriptyline was expected to resemble imipramine clinically in its depression alleviation effects.

"Structural similarity, alone, may be sufficient to give rise to an expectation that compounds similar in structure will have similar properties." *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). However, the Board did not rest its conclusion of obviousness on structural similarity alone. Rather, the Board further recognized that in attempting to predict the biological activities of a drug, a skilled medicinal chemist would not proceed randomly, but would base his attempts on the available knowledge of prior research techniques, and literature used in his field. The prior art showed that one such technique was "bioisosteric replacement" or the theory of bioisosterism—where the substitution of one atom or group of atoms for another atom or group of atoms having similar size, shape and electron density provides molecules having the same type of biological activity. Finding that the Friedman, Burger and Petersen references taught that bioisosterism was commonly used by medicinal chemists prior to 1959 in an effort to design and predict drug activity, the Board concluded that one of ordinary skill in the arts would have been aware of this technique at the time of appellant's invention.<sup>8</sup> Further, the Board

8. Appellant submitted the declaration of Dr.

Paul N. Craig, an experienced medicinal chem-

found that Petersen taught as bioisosteric the interchange of the nitrogen and unsaturated carbon atoms—the precise structural difference between imipramine and amitriptyline.<sup>9</sup>

We see no clear error in the Board's determination as to the teachings of the prior art references, in combination. In view of these teachings, which show a close structural similarity and a similar use (psychotropic drugs) between amitriptyline and imipramine, one of ordinary skill in the medicinal chemical arts, possessed of the knowledge of the investigative techniques used in the field of drug design and pharmacological predictability, would have expected amitriptyline to resemble imipramine in the alleviation of depression in humans. Accordingly, we agree with the Board that appellant's invention was *prima facie* obvious over the prior art of record.

[2-4] In traversing the Board's decision of obviousness, appellant has urged that the Board's decision was premised on an impermissible "obvious to try" standard. Appellant contends that there was no motivation in the prior art to arrive at appellant's invention. "[O]bvious to try is not the standard of 35 U.S.C. § 103." *In re Antonie*, 559 F.2d 618, 620, 195 USPQ 6, 8 (CCPA 1977) (emphasis omitted). Rather, the test is whether the references, taken as a whole, would have suggested appellant's invention to one of ordinary skill in the medicinal chemical arts at the time the invention was made. *In re Simon*, 461

F.2d 1387, 1390, 174 USPQ 114, 116 (CCPA 1972). Clearly, amitriptyline and imipramine, both known psychotropic drugs, are closely structurally related. The expectation that the similar structures would behave similarly was suggested in the Roche Reports. In combination with those teachings, the prior art teaching that the precise structural difference between amitriptyline and imipramine involves a known bioisosteric replacement provides sufficient basis for the required expectation of success, without resort to hindsight.<sup>10</sup> Obviousness does not require absolute predictability. *In re Lamberti*, 545 F.2d 747, 750, 192 USPQ 278, 280 (CCPA 1976). Only a reasonable expectation that the beneficial result will be achieved is necessary to show obviousness. *In re Longi*, 759 F.2d 887, 897, 225 USPQ 645, 651 (Fed.Cir.1985).

[5] We also find untenable appellant's arguments that Petersen teaches away from appellant's invention. Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references. *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). Thus, Petersen must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole. That teaching is that the interchange of the nitrogen and the unsaturated carbon atoms is isosteric and compounds so modified are

ist, JA p. 372. His view was that the concept of bioisosterism could not be used in 1959 to predict the antidepressant effects in amitriptyline or the pharmacological differences between imipramine and amitriptyline. Dr. Craig stated:

[I]n my opinion "isosterism" in 1959 afforded no basis for predicting the specific pharmaceutical utility in humans, and it is my belief that that is still true today.... I do not believe the carryover of tranquilizing activity from chlorpromazine to chlorprothixene afforded a reasonable basis for predicting the carryover of antidepressant properties from imipramine to amitriptyline.

Affidavit of Paul N. Craig, JA, pp. 374-75. Plainly the Board was not clearly erroneous in discounting that testimony. There was independent evidence in the record to the contrary. The Friedman, Burger and Petersen references

recognize that concept as a means of predicting biological properties in isosterically-related compounds prior to 1959.

9. Petersen even went so far as to suggest that the apparent bioisosteric relationship between the interchange of the nitrogen and unsaturated carbon atoms led to the design of chlorprothixene in the expectation that the compound would share the same biological activity as chlorpromazine. See Petersen, *supra*, at p. 395.

10. The teachings of the Roche Reports as well as the Petersen reference distinguish this case from *In re Grabiak*, 769 F.2d 729, 731, 226 USPQ 870, 871 (Fed.Cir.1985) ("there is no motive in the cited art to make the modification required to arrive at appellants' compounds").



expected to possess similar biological properties.

[6] Neither are we persuaded by appellant's contention that the Board erred in relying on the contemporaneous independent invention of others to support its holding of obviousness.<sup>11</sup> As we have said earlier, the teachings of the prior art references in combination adequately support the Board's conclusion. However, the additional, although unnecessary, evidence of contemporaneous invention is probative of "the level of knowledge in the art at the time the invention was made." *In re Farrenkopf*, 713 F.2d 714, 720, 219 USPQ 1, 6 (Fed.Cir.1983).

[7, 8] *Unexpected Results*: A prima facie case of obviousness can be rebutted by evidence of unexpected results. *In re Davies*, 475 F.2d 667, 670, 177 USPQ 381, 384 (CCPA 1973). In rebuttal of the PTO's prima facie case appellant has asserted that, as compared to imipramine, amitriptyline unexpectedly has a more potent sedative and a stronger anticholinergic effect. In support of this contention, appellant has relied on an affidavit of Dr. Joseph J. Schildkraut,<sup>12</sup> a psychiatrist and a Professor of Psychiatry at Harvard, and also on a published record of a symposium of physicians and psychiatrists concerned with the treatment of the depressed patient.<sup>13</sup>

Dr. Schildkraut's affidavit recognizes some pharmacological differences between amitriptyline and imipramine including the fact that amitriptyline is a more potent sedative and has a stronger anticholinergic

effect than imipramine. Further, Dr. Schildkraut notes that depressed patients have responded differently to amitriptyline and imipramine, some responding to one and not the other or more favorably to one than to the other. For the most part, the record of the cited symposium confirms the differences noted in the Schildkraut affidavit.<sup>14</sup> That record also counseled practicing physicians on choosing from the spectrum of tricyclic antidepressants (a term which includes amitriptyline and imipramine) the particular drug useful for an individual patient.

After a careful consideration of all the evidence, we are persuaded that the Board did not err in determining that the alleged unexpected properties of amitriptyline are not so unexpectedly different from the properties of imipramine, the closest prior art, as to overcome the prima facie showing of obviousness. The prior art of record clearly taught that amitriptyline was a known sedative.<sup>15</sup> The evidence before us (which was, of course, before the Board) further revealed that all tricyclic antidepressant drugs, in general, possess the secondary properties of sedative and anticholinergic effects. Specifically, the record showed that during the prosecution of the reissue application, appellant submitted an article entitled "Using the tricyclic antidepressants" which included a table comparing the properties of known tricyclic antidepressant drugs.<sup>16</sup> Included in these properties were sedative and anticholinergic effects of the known antidepressants.<sup>17</sup>

11. *Ex Parte Edward L. Engelhardt*, Appeal No. 424-40, *supra* note 1, at pp. 23-24, JA pp. 22(1)-22(m), where the Board indicated that evidence before it revealed that four other groups of inventors independently and contemporaneously discovered amitriptyline's antidepressant properties using reasoning based on a thorough knowledge of investigative techniques, which included the concept of isosterism, used in the medicinal art area.

12. Affidavit of Joseph J. Schildkraut, JA p. 366.

13. Symposium, *Depression Today—Experts Answer Your Questions*, JA p. 309.

14. Dr. Schildkraut was a member of the symposium.

15. *Rey-Bellet, supra*, col. 2, line 16.

16. *Patient Care*, "Using the Tricyclic Antidepressants," pp. 28-33, 35-36, 39-40, 43-45, 49-52, 57-58, 63-64, 67-68, 71, 73-76, 78, 81, 84-85, (May 15, 1979); *see also* Commission's Appendix, pp. CA 17-45.

17. *See also* the Symposium, *Depression Today—Experts Answer Your Questions, supra* note 13, at p. 315, where Dr. Hollister indicates that when choosing from the spectrum of tricyclic antidepressant drugs, the choice is based on three pharmacological actions including (1) the amount of sedation (2) the amount of anticholinergic effect and (3) the nature of the drugs in

Thus, it appears that the alleged difference in properties between amitriptyline and imipramine is a matter of degree rather than kind. Moreover, as to the sedative effects, the article revealed only a slight difference between the two compounds. Amitriptyline was characterized as "highly sedative" while imipramine was only "somewhat less [sedative] than amitriptyline."<sup>18</sup> Regarding the anticholinergic effect, the article showed that both drugs have anticholinergic effects but to a different degree. These are not truly unexpected results. The Board found in one of its reissue opinions (incorporated in the reexamination decision now on appeal): "[i]n regard to the sedative and anticholinergic properties of amitriptyline, we are not convinced that the side effects of this material [amitriptyline] are significantly or unexpectedly different from the level of those properties exerted by the closest prior art antidepressant, imipramine."<sup>19</sup>

The core of it is that, while there are some differences in degree between the properties of amitriptyline and imipramine, the compounds expectedly have the same type of biological activity. In the absence of evidence to show that the properties of the compounds differed in such an appreciable degree that the difference was really unexpected, we do not think that the Board erred in its determination that appellant's evidence was insufficient to rebut the prima facie case. The fact that amitriptyline and imipramine, respectively, helped some patients and not others does not appear significant. As noted by the Board, a difference in structure, although slight, would have been expected to produce some difference in activity.

In sum, we hold that the claimed invention would have been obvious to one of ordinary skill in the art. Accordingly, the decision of the Board is

**AFFIRMED.**

primarily blocking the uptake of serotonin or norpinephrine.

18. *Patient Care*, "Using the Tricyclic Antidepressants," *supra* note 16, at p. 50.

BALDWIN, Circuit Judge, dissenting.

The rejection by the board is flawed because it did not analyze the invention according to the requirement of 35 U.S.C. § 103. The board wrote:

The issue before us in considering the instant claims on their merits for patentability is whether the artisan having the requisite skill in the pertinent art area and a knowledge of the available prior art would have been motivated to employ amitriptyline in the treatment of human depression.

That is, whether it would have been obvious to try amitriptyline as an antidepressant. Guided by the disclosure of the applicant, the board pieced together information from various patents, journal articles, and papers, and concluded:

It remains our position that one having ordinary skill in this art are[sic] would have been familiar with the concept of bioisosterism and because of this knowledge would have concluded that the known compound, i.e., amitriptyline, would be *potentially* useful as an antidepressant. [Emphasis ours.]

That is, it would have been obvious to try amitriptyline as an antidepressant. Obvious-to-try is not the test for patentability under 35 U.S.C. § 103. This court and its predecessor, the CCPA, have repeatedly rejected that approach. *In re Goodwin*, 576 F.2d 375, 377, 198 USPQ 1, 3 (CCPA 1978); *In re Antonie*, 559 F.2d 618, 620, 195 USPQ 6, 8 (CCPA 1977); *In re Lindell*, 385 F.2d 453, 455, 155 USPQ 521, 523 (CCPA 1967); *In re Tomlinson*, 363 F.2d 928, 150 USPQ 623 (CCPA 1966); *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963); *see also In re Grabiak*, 769 F.2d 729, 226 USPQ 870 (Fed.Cir.1985).

Congress has also rejected that approach by enacting the second sentence of 35 U.S.C. § 103, which states "[p]atentability shall not be negated by the manner in

19. *Ex Parte Edward L. Engelhardt*, Appeal No. 480-01, *supra* note 1, at p. 12, JA p. 34.

which the invention was made." The reviser's note on this sentence states "it is immaterial whether it resulted from long toil and experimentation or from a flash of genius."

The obvious-to-try analysis is an attack on the method of making an invention that specifically penalizes people in areas of endeavor where advances are won only by great effort and expense. The pharmaceutical field is particularly hard hit because there is an overabundance of structures that are obvious to try. Consider, for example, the Petersen reference which the majority cites to demonstrate the possibility that a nitrogen atom may be replaced by a double-bonded carbon atom. This journal article records an attempt to find drugs useful for the treatment of endogenous psychoses, i.e., tranquilizers. The researchers tested eighteen chemicals with closely related structures. These materials were injected into mice, and compared for their ability to make the mice fall asleep. The results of these tests may be tantalizing and useful, but only as a guide for further research. I agree that, based on this information and the other references cited by the board, the researcher with ordinary skill in the art would be motivated to investigate the possibility of substituting a double-bonded carbon atom for nitrogen. The researcher would also be motivated to test every other structural variation in Petersen, as well as a host of others. Under an obvious-to-try analysis, any of these structures which ultimately is shown to be effective as an antidepressant in human beings would be unpatentable because the researcher dared to follow a logical plan.

The board and the majority also err by reading too much certainty into the teachings of the references. They have not considered the references as a whole. Friedman discusses the phenomenon that com-

pounds with similar chemical structures sometimes behave in a similar fashion in a biological system. Once such a compound has been tested and found to have the same biological activity, it is called "bio-isosteric."<sup>1</sup>

Friedman also teaches that an isosteric compound "may have the same activity as the original, or more usually it may have an *antagonistic* effect." (Emphasis added.) Friedman explains that in order to predict biological activity with accuracy, one ideally should know (1) the mechanism by which the original drug acts and (2) what part of the structure of the original drug is critical to the original drug activity.<sup>2</sup> That reference also unequivocally states that comparisons should be made in living systems, but such information is not easily available. That reference relies on *in vitro* testing, and it specifically states that *in vitro* results may or may not correlate with clinical studies. It also clearly states that, for the purposes of its discussion, biological activities such as absorption, distribution, conjugation (detoxification), taste, odor and *side effects of drugs* will be ignored. Friedman concludes that compounds with similar structures need not be bio-isosteric.

The Burger reference does discuss bio-isosterism and its usefulness in designing new drugs. Its evaluation of bio-isosterism as a tool for predicting drug activity is as follows:

However, if one can achieve a gradual change of biological behavior and follow it accurately at each step of minor structural alteration, one is bound to enhance one property, suppress another, and ultimately arrive at a drug suitable for therapy. Shortcuts to this disconcertingly tedious process have not been found, and this is probably responsible for the still

human beings. The theory of bio-isosterism as used by the board and majority is nothing more or less than an analysis of structural obviousness.

1. The term "bio-isosteric" therefore is simply a conclusion drawn after testing. The label is properly limited to the system and purpose for which the compounds were tested. For example, two drugs could be bio-isosteric with respect to making mice fall asleep, and not bio-isosteric when tested at a particular dosage level for the treatment of high blood pressure in

2. Neither this reference nor any of the others purport to disclose either piece of information.

prevailing opinion that new useful drugs will be discovered most easily by more or less empirical procedures.

at page 369, and

Slight stereochemical or structural changes may alter considerably the biological role of a compound. Patient variation of at least a reasonable number of structures is still the only answer to this question.

at page 370.

The Roche reports contain background information about various pharmacological effects of amitriptyline. The information was derived from testing for its toxicity and tranquilizing effect on animals. This information would be essential to a decision to clinically test the drug. It is not sufficient to show the drug would be useful for treating human beings. Congress gave pragmatic recognition to the difficulty of determining whether a new drug is useful by its enactment of the 1962 amendment to 21 U.S.C. § 321. That action was taken in response to problems caused by another tranquilizer, thalidomide.

Neither these references, nor the other references cited by the board and the majority purport to teach the worker with ordinary skill in the art that amitriptyline is a drug that is useful for treating depression in human beings. That conclusion is steps removed from the information presented by these sources. I would reverse.



ROLLS-ROYCE LIMITED and  
Renishaw, plc, Appellees,

v.

GTE VALERON  
CORPORATION, Appellant.

Appeal No. 86-761.\*

United States Court of Appeals,  
Federal Circuit.

Sept. 8, 1986.

Action was brought seeking injunction and damages for alleged infringement of four patents, in which alleged infringer claimed invalidity and counterclaimed for unfair competition. The United States District Court for the Eastern District of Michigan, 625 F.Supp. 343, Horace W. Gilmore, J., entered judgment for patent holders. Appeal and cross appeals were taken. The Court of Appeals, Markey, Chief Judge, held that: (1) claim 15 of patent for device to mount stylus in position-determining apparatus was not invalid for anticipation or obviousness in view of two references; (2) claims of chain patents for six-way probe were infringed by five-way probe; and (3) alleged infringer did not willfully infringe stylus patent when it attempted to design around claims and failed to seek advice of counsel as to infringement.

Affirmed.

#### 1. Patents ⇐51(1)

Test to determine whether patent was invalid for anticipation was disclosure in a single, prior art reference of each element of claim under consideration. 35 U.S.C.A. § 102.

#### 2. Patents ⇐312(6)

District court's findings that prior art references did not disclose three points of mechanical contact to achieve positively defined rest position and that prior art refer-

818, with No. 86-761.

\* On January 31, 1986, this court ordered consolidation of Rolls-Royce's cross-appeal, No. 86-

Cite as 490 F.2d 981 (1974)

Application of Stephen F. ROYKA  
and Robert G. Martin.

Patent Appeal No. 9092.

United States Court of Customs  
and Patent Appeals.

Feb. 7, 1974.

Appeal from the decision of the Patent Office Board of Appeals affirming the examiner's rejection of patent application, Serial No. 648,701, for a "responsive answer system." The Court of Customs and Patent Appeals, Rich, J., held that an answer sheet for use in self-instruction and testing, in which were printed in "response areas" meaningful information in permanent printing and confusing information in printing which could be removed, as by an erasure, both being legible so that a student, seeing a choice of answers to a question, was required to make a selection, the correctness of the selection being shown by the information which was then removed by the erasure, was not anticipated by prior patents and was therefore patentable.

Reversed.

Patents  $\text{C}\text{--}66(1.20)$

"Responsive answer system," answer sheet for use in self-instruction and testing, in which were printed in "response areas" meaningful information in permanent printing and confusing information in printing which could be removed, as by erasure, both being legible so that student, seeing choice of answers to question, was required to make selection, correctness of selection being shown by information which was then removed by erasure, was not anticipated by prior patents and was therefore patentable. 35 U.S.C.A. §§ 102, 103.

Michael H. Shanahan, Rochester, N. Y., of record, for appellant; Thomas M. Webster, Rochester, N. Y., Boris Haskell, Washington, D. C. (Paris, Haskell & Levine), Washington, D. C., of counsel.

Joseph F. Nakamura, Washington, D. C., for the Commissioner of Patents. Fred W. Sherling, Washington, D. C., of counsel.

Before MARKEY, Chief Judge, and RICH, BALDWIN, LANE and MILLER, Judges.

RICH, Judge.

This appeal is from the decision of the Patent Office Board of Appeals affirming the examiner's rejection of claims 28 and 30-36 of application serial No. 648,701, filed June 26, 1967, entitled "Responsive Answer System." We reverse.

### *The Invention*

The appealed claims are directed to a device in the nature of an answer sheet for use in self-instruction and testing. The answer sheet may be associated with questions or separate therefrom. The essential features of the invention are that there are printed on the answer sheet in "response areas" meaningful information in permanent printing and confusing information in printing which can be removed, as by an eraser, both being legible so that a student, seeing a choice of answers to a question, must make a selection. Having made a selection, he then applies an eraser to the selected response area and some of the information will be readily removed. What remains advises him of the correctness or otherwise of his answer. The following figures from the drawings are illustrative:

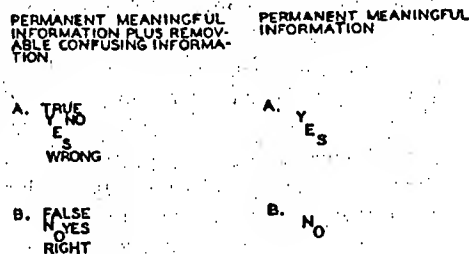


FIG. 1A

FIG. 1B

Fig. 1A shows two response areas to a given question before any removing ac-

tion by the student has taken place and Fig. 1B shows the permanent information remaining in each after erasure of the removable information. Of course, if the student makes an initial choice of area A, showing up "YES" or some other indication of a correct answer, he will not need to proceed further and erase the B area. In a modified form of the invention, a wrong selection, plus erasure, may expose, instead of or in addition to a statement that the answer is wrong, a number or other reference to further material which is to be studied.

A preferred method of printing the permanent meaningful information and the removable confusing information is by that type of xerography in which a fusible toner is used, the permanence of the printing depending on the extent to which the toner image is "fixed" or fused by heat. By successive printings of the two kinds of information with fixing to different degrees, one image can be made permanent and the other made subject to easy removal, both images retaining such similarity of appearance that the user of the answer sheet cannot tell them apart.

Claim 28 is the principal claim, all others being dependent thereon, and reads as follows:

28. A device for selectively indicating information comprising

a support having response areas for presenting information for selection,

permanent printing indicative of meaningful information permanently fixed to said support within a response area, and

removable printing indicative of confusing information removably fixed to said support within a response area,

said meaningful and confusing information being substantially legible even when said permanent and removable printing are fixed over one another on said support,

said permanent and removable printing being substantially similar such that an observer cannot determine

which information is permanent and which is removable

whereby the information within a response area is selected by attempting to remove the printing therein with the failure to remove printing identifying meaningful information.

Claims 30-36 add limitations which need not be considered except for noting that claims 33 and 34 alone specify the use of a xerographic toner, for which reason they were rejected on a different ground from the other claims.

### *The Rejection*

The following references were relied on:

Reid et al. (Reid)	356,695	Jan. 25, 1887
Bernstein et al. (Bernstein)	3,055,117	Sep. 25, 1962
Lein et al. (Lein)	3,364,857	Jan. 23, 1968 (filed Feb. 2, 1966)

Claims 28, 30, 31, and 32 were rejected as anticipated under 35 U.S.C. § 102 by Bernstein; claims 28, 31, 32, 35, and 36 were rejected as anticipated under § 102 by Reid; and claims 33 and 34 were rejected under 35 U.S.C. § 103 for obviousness, on either Bernstein or Reid in view of Lein. These were the examiner's rejections and the board affirmed them, adhering to its decision on reconsideration.

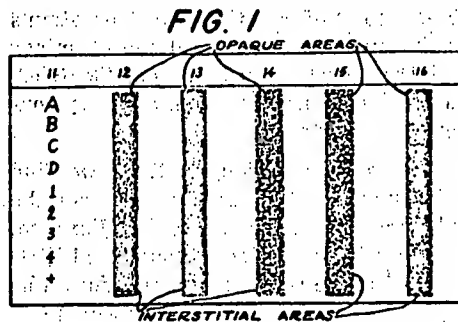
Bernstein discloses an answer sheet in which printed information representing a response is "temporarily concealed from the observer" and he discloses a number of different ways of effectively concealing the response. His specification states:

The objects of the invention are accomplished by utilizing the hiding media to confuse the participant and to render the response and the hiding media indistinguishable and thus conceal the presence, absence, nature or position of the response from the participant. This may be effectuated by careful attention being paid to a number of factors including the design,

Cite as 490 F.2d 981 (1974)

color and position of the hiding or confusing media.

Fig. 1 of Bernstein's drawings, illustrates some of his concealing means:



The following is the written description:

Referring now to the drawing, FIG. 1 illustrates some of the many optically confusing patterns which may be positioned between the printed structure to be concealed and the point of observation. Column 11 shows the information which is to be concealed. This information is repeated in columns 12 through 16 but in each case is concealed by a pattern in accordance with the present invention. Column 12 utilizes a pattern comprising an alphabetical maze in both line and half tone screen. Column 13 utilizes a pattern comprising an absorbing field having a plurality of irregular dot-like interstices. Column 14 utilizes a pattern comprising a maze of plus signs combined with dots. Columns 15 and 16 illustrate irregular and non-repetitious patterns.

Bernstein says that if at least 50% of the response is actually covered by the opaque portions of the confusion pattern, complete concealment is obtained. He also says that added means of concealment may be used, such as scoring and embossing and perforating the paper in order to scatter the light or let it shine through.

Reid is entitled "Transformation Picture and Print." The invention is said to be useful for advertisements, Christmas cards, birthday cards, valentines, and the like and as a source of amuse-

ment and instruction for children. It consists of a picture or print, part of which is permanently printed and part of which is removable from the paper on which it is printed. For the latter various soluble undercoatings or inks are described. If the picture is washed with a solvent, which may be water, the removable part disappears and the pictorial and/or typographic matter changes. The invention is illustrated by a typical nineteenth century temperance propaganda piece depicting the evils of drink. In the finished picture there are three scenes from left to right: Scene 1, the innocent child leads her father home from the pub; Scene 2, Father sits slumped in the kitchen chair with his bottle beside him, the family wash hanging above his head, this picture being entitled "The Effects of Drink"; Scene 3, Mother stands in front of a sign reading "Pawn Shop." Across the bottom of the picture is a legend which says "Wash the above and see what water will do." Fig. II shows the result of washing with water: Scene 1, a handsome young man and his happy daughter stroll on the street; Scene 2, Father sits erect in a well-appointed room at a cloth-covered table, apparently having a cup of tea, obviously a gentleman; Scene 3, Mother beams from the sideline and the Pawn Shop sign has vanished. Two new subscriptions appear and the words "The" and "Drink" have disappeared, the resultant being a new picture title reading "The Beneficial Effects of Temperance." "The Beneficial" and "Temperance" were covered by some soluble opaque in the original picture. No doubt the overall effect is instruction. Perhaps there was amusement in bringing about the transformation.

Lein relates to xerography and is relied on only for its disclosure of the removability of partially fused toner and the permanence of fully fused toner.

#### OPINION

As to the § 102 anticipation rejections, it will suffice to consider independent claim 28. If it is not fully met by Reid

or Bernstein, neither are the more limited dependent claims. It is elementary that to support an anticipation rejection, all elements of the claim must be found in the reference. We do not find claim 28 anticipated by Bernstein because, as we read the claim, it requires the display of *legible* meaningful and *legible* confusing *information* simultaneously, between which the user of the device may make a selection before he undertakes to remove any of the information from the response area selected by him. The element we find most clearly missing, contrary to the reasoning of the examiner and the board, is the legible confusing *information*. The Patent Office proposes to read this limitation on Bernstein's confusion patterns which are nothing but meaningless obscuring screens, conveying no information and providing the user with no basis for making a *selection*, as called for by claim 28. In appellants' device the legible confusing information—i. e., the wrong answers—are legible in the sense that they can be read as intelligible words, not merely a jumble of type serving to obscure the words of the wrong answers.

Appellants were fully aware of Bernstein and discussed its disclosures in their specification, distinguishing from this and other prior art, saying, in part:

The inventive concept hereof confuses not by physical blocking as taught by the prior art, but by compounding, associating (including disarranging) permanent information with confusing information, usually at least some of which is similar in character to the permanent information as to render it impossible to tell which is permanent and which is removable confusing information. In the invention, generally no attempt is made to de-designedly physically cover the permanent information, but to confuse it beyond interpretation by the presentation of extraneous removable, confusing information.

Claims are not to be read in a vacuum and while it is true they are to be given

the broadest *reasonable* interpretation during prosecution, their terms still have to be given the meaning called for by the specification of which they form a part. We cannot read the terms "legible" and "information" on Bernstein's confusion patterns, as did the examiner and the board. They are not "legible," as appellants use the term, and they convey no information.

As to anticipation by Reid, we find neither appellants' basic concept nor the substance of claim 28 to be disclosed. Apparently the solicitor could find little to support the rejection in Reid for all he says in his brief—so far as claim 28 is concerned—is:

Reid discloses a sheet which may be used for instruction and which may have a removable design partly covering a fixed design \* \* \*. Therefore, the disclosure of the reference encompasses the arrangement wherein a removable design covers a fixed design with both designs being substantially legible.

But claim 28 does not call for an arrangement wherein a removable design covers a fixed design. It calls for response areas, which Reid does not have, containing meaningful information in permanent printing together with removable printing conveying confusing information, both legible at the same time, between which a "selection" can be made. The only choice offered to the user by Reid is to follow the instruction to wash the whole visible picture with water or other solvent, thus removing the overprinting, to discover what the permanent picture is. The Patent Office attempt to read claim 28 on this reference is a *tour de force*. We hold that Reid does not anticipate for failure to meet the limitations of claim 28 to "response areas," to the presentation of two categories of information (meaningful-permanent and removable-confusing) within such areas, and the possibility of selection. Anticipation requires a finding that the claimed invention be disclosed. It is not enough to say that appellants' invention and the reference are



both usable for instruction and both consist of permanent and removable printings on paper, as did the solicitor.

The dependent claims rejected with claim 28, as anticipated under § 102, are not anticipated since claim 28 is not anticipated. Some of them merely add features which are disclosed by the references and some do not. Insofar as they do not, they further negative anticipation. The examiner recognized this fact as to claims 33 and 34, which are limited to xerography, and therefore did not reject them under § 102. Similarly, he did not reject claim 30 on Reid or claims 35 and 36 on Bernstein. We find that claims 35 and 36 contain limitations which additionally distinguish from Reid. We have already noted that Reid has no "response areas" as required by claim 28 and so Reid does not disclose the structure of claim 35 which additionally requires both the correct and incorrect answers to appear within the same response area.

As to claim 36, the examiner said it "is merely a printed matter variation of the design of the reference," Reid. This is not a valid reason for rejection. Printed matter may very well constitute structural limitations upon which patentability can be predicated. We have commented on this matter in *re Jones*, 373 F.2d 1007, 54 CCPA 1218 (1967); and in *re Miller*, 418 F.2d 1392, 57 CCPA 809 (1969), and will not repeat ourselves. The limitations of claim 36 are not remotely suggested by Reid.

There remains the § 103 rejection of claims 33 and 34. Do they, taken together with all of the limitations of claim 28 from which they depend, define obvious subject matter? The difference between claim 28 and these two dependent claims is that they add the limitations to xerography. If Bernstein and Reid showed the claimed invention except for xerography, the addition of the Lein reference would make the subject matter of the claims obvious. But that is not the situation here. Adding the knowledge of xerographic technology to Bernstein or Reid still does not make the

invention of claims 33 and 34 obvious for the same reasons we have given above in discussing anticipation. The essence of appellants' invention, as set forth in claim 28, is still missing notwithstanding the addition of the Lein reference and we see nothing in the combinations of references which would have made the invention obvious to one of ordinary skill in the art at the time it was made. We will, therefore, reverse this rejection.

The decision of the board is *reversed*.

*Reversed.*



**CHRYSLER CORPORATION, Plaintiff-Appellant,**

**John T. DUNLOP, Director Cost of Living Council, et al., Defendants-Appellees.**

No. DC-18.

Temporary Emergency Court of Appeals.

Dec. 5, 1973.

In manufacturer's action for declaratory and injunctive relief with respect to order of the Cost of Living Council deferring consideration of the merits of manufacturer's proposed price increase, the United States District Court for the District of Columbia, Barrington D. Parker, J., denied preliminary injunction, and manufacturer appealed. The Temporary Emergency Court of Appeals held that if the order was not supported by substantial evidence, manufacturer would have substantial likelihood of prevailing on the merits, that the trial court should have made findings of fact and conclusions of law on the question of whether the order was supported by substantial evidence, and that the trial court should consider manufacturer's proposal that it would escrow all moneys

In justifying the Board's procedures, this court criticizes Mrs. Mendoza for not repeating the information that she had already filed. The court states: "in spite of a specific Order from the Administrative Judge requesting evidence showing that good cause existed for the delay, Mrs. Mendoza never once *thereafter* referred to timeliness, waiver, or good cause." This court fatally faults Mrs. Mendoza for not "thereafter" referring to "timeliness" and "waiver" or the reasons for her delay, although these precise words and her reasons had already been filed, in accordance with the Board's instructions for untimely appeals.

This court does not explain why the administrative judge's lack of responsiveness to Mrs. Mendoza's request for waiver must be twice excused, while placing the burden of prescience on Mrs. Mendoza. Mrs. Mendoza was apparently supposed to grasp that the administrative judge had failed to read her initial submission, and therefore that she was obliged to repeat it. However, even the Board does not now argue in favor of the procedure followed in this case.

## C

The issuance of form "orders" in inapplicable circumstances can only confuse the public that OPM and the Board are designed to serve. The Board recognizes that its *pro se* petitioners are "entitled to some leniency with respect to court-type formalities." *Black v. Dep't of Hous. and Urban Dev.*, 42 M.S.P.R. 83, 86 n. 2 (1989). See also *Hughes v. Rowe*, 449 U.S. 5, 9, 101 S.Ct. 173, 175, 66 L.Ed.2d 163 (1980) (recognizing needs of *pro se* petitioners). The Board regulations state that "The judge will provide the party with an opportunity to show why the appeal should not be dismissed as untimely." 5 C.F.R. § 1201.22(c). The opportunity here provided was flawed, for Mrs. Mendoza's excuse was not considered by the Board, and she now is receiving from this court an adverse decision based on the Board's newly presented

From P. Broida *A Guide to Merit Systems Protection Board Law & Practice*, 244 (9th ed. 1992)

information and argument, to which she had no opportunity to respond.

I fully agree that it is improper for a court to intrude into an agency's routine operations. See *Phillips v. United States Postal Service*, 695 F.2d 1389, 1390 (Fed. Cir.1982) (Board authorized to control its operations through prescribed Regulations). However, the issuance by an administrative judge of two non-responsive form "orders", not addressing the petitioner's request on its merits, followed by forfeiture of substantive legal rights, is not a routine operation. Judicial correction of legal error is not micromanagement of operations. It is our responsibility. See 5 U.S.C. § 7703(c) (Federal Circuit shall "set aside any agency action . . . found to be . . . obtained without procedures required by law, rule or regulation having been followed").



In re Carl D. CLAY.

No. 91-1402.

United States Court of Appeals,  
Federal Circuit.

June 10, 1992.

Appeal was taken from decision of Board of Patent Appeals and Interferences affirming rejection of claims of patents for process for storing refined liquid hydrocarbon product in storage tank having dead volume between tank bottom and outlet port as being unpatentable because of obviousness. The Court of Appeals, Lourie, Circuit Judge, held that patent was not rendered obvious by prior invention using gel to channel flow of petroleum in naturally occurring underground reservoirs.

Reversed.

(citing Chap. 3 of the Board's *Judge's Handbook*).

1. Patents  $\Rightarrow$ 314(5)

Although conclusion that invention would have been obvious from combined teachings of prior art is one of law, such determinations are made against background to several factual inquiries, one of which is scope and content of prior art.

2. Patents  $\Rightarrow$ 314(5), 324.55(2)

Whether referenced prior art is "analogous" is a fact question and, therefore, Court of Appeals for the Federal Circuit reviews decision of Patent and Trademark Office Board of Patent Appeals and Interferences on that point under clearly erroneous standard. 35 U.S.C.A. § 103.

3. Patents  $\Rightarrow$ 16(2)

Criteria to be considered in determining whether prior art is analogous under statute rendering a patent invalid based on obviousness are whether art is from same field of endeavor, regardless of problem addressed, and if reference is not within field of inventor's endeavor, whether reference still is reasonably pertinent to particular problem with which inventor is involved. 35 U.S.C.A. § 103.

4. Patents  $\Rightarrow$ 16(2)

Patent for process of using gel in storing refined liquid hydrocarbon products in storage tanks was not rendered obvious by prior invention using gel to channel flow of petroleum in naturally occurring underground reservoir; prior invention was not within same field of endeavor as patentee's process and was not reasonably pertinent to problem patentee attempted to solve. 35 U.S.C.A. § 103.

5. Patents  $\Rightarrow$ 16(2)

Prior art reference is reasonably pertinent, for purposes of determining whether prior art is analogous so as to render patent invalid for obviousness, is, even though it may be from different field from that of inventor's endeavor, it is one which, because of matter with which it deals, logically would have commended itself to inventor's intent in considering his problem. 35 U.S.C.A. § 103.

Jack E. Ebel, Marathon Oil Co., Littleton, Colo., argued, for appellant. With him on the brief, was Paul T. Meiklejohn, Seed & Berry, Seattle, Wash., of counsel.

Teddy S. Gron, Associate Sol., Office of Sol., Arlington, Va., argued, for appellee. With him on the brief, was Fred E. McKelvey, Sol. Of counsel was Richard E. Schaffer.

Before PLAGER, LOURIE, and CLEVINGER, Circuit Judges.

LOURIE, Circuit Judge.

Carl D. Clay appeals the decision of the United States Patent and Trademark Office, Board of Patent Appeals and Interferences, Appeal No. 90-2262, affirming the rejection of claims 1-11 and 13 as being unpatentable under 35 U.S.C. § 103. These are all the remaining claims in application Serial No. 245,083, filed April 28, 1987, entitled "Storage of a Refined Liquid Hydrocarbon Product." We reverse.

## BACKGROUND

Clay's invention, assigned to Marathon Oil Company, is a process for storing refined liquid hydrocarbon product in a storage tank having a dead volume between the tank bottom and its outlet port. The process involves preparing a gelation solution which gels after it is placed in the tank's dead volume; the gel can easily be removed by adding to the tank a gel-degrading agent such as hydrogen peroxide. Claims 1, 8, and 11 are illustrative of the claims on appeal:

1. A process for storing a refined liquid hydrocarbon product in a storage tank having a dead volume between the bottom of said tank and an outlet port in said tank, said process comprising:

preparing a gelation solution comprising an aqueous liquid solvent, an acrylamide polymer and a crosslinking agent containing a polyvalent metal cation selected from the group consisting of aluminum, chromium and mixtures thereof, said gelation solution capable of forming a rigid crosslinked polymer gel which is

substantially insoluble and inert in said refined liquid hydrocarbon product;

placing said solution in said dead volume;

gelling said solution substantially to completion in said dead volume to produce said rigid gel which substantially fills said dead volume; and

storing said refined liquid hydrocarbon product in said storage tank in contact with said gel without substantially contaminating said product with said gel and without substantially degrading said gel.

8. The process of claim 1 further comprising removing said rigid gel from said dead volume by contacting said gel with a chemical agent which substantially degrades said gel to a flowing solution.

11. The process of claim 1 wherein said gelation solution further comprises an aqueous liquid contaminant present in said dead volume which dissolves in said solution when said solution is placed in said dead volume.

Two prior art references were applied against the claims on appeal. They were U.S. Patent 4,664,294 (Hetherington), which discloses an apparatus for displacing dead space liquid using impervious bladders, or large bags, formed with flexible membranes; and U.S. Patent 4,683,949 (Sydansk), also assigned to Clay's assignee, Marathon Oil Company, which discloses a process for reducing the permeability of hydrocarbon-bearing formations and thus improving oil production, using a gel similar to that in Clay's invention.

The Board agreed with the examiner that, although neither reference alone describes Clay's invention, Hetherington and Sydansk combined support a conclusion of obviousness. It held that one skilled in the art would glean from Hetherington that Clay's invention "was appreciated in the prior art and solutions to that problem generally involved filling the dead space with something." Opinion at 3 (emphasis in original).

The Board also held that Sydansk would have provided one skilled in the art with information that a gelation system would

have been impervious to hydrocarbons once the system gelled. The Board combined the references, finding that the "cavities" filled by Sydansk are sufficiently similar to the "volume or void space" being filled by Hetherington for one of ordinary skill to have recognized the applicability of the gel to Hetherington.

#### DISCUSSION

[1] The issue presented in this appeal is whether the Board's conclusion was correct that Clay's invention would have been obvious from the combined teachings of Hetherington and Sydansk. Although this conclusion is one of law, such determinations are made against a background of several factual inquiries, one of which is the scope and content of the prior art. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 86 S.Ct. 684, 693-94, 15 L.Ed.2d 545, 148 USPQ 459, 467 (1966).

A prerequisite to making this finding is determining what is "prior art," in order to consider whether "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103. Although § 103 does not, by its terms, define the "art to which [the] subject matter [sought to be patented] pertains," this determination is frequently couched in terms of whether the art is analogous or not, *i.e.*, whether the art is "too remote to be treated as prior art." *In re Sovish*, 769 F.2d 738, 741, 226 USPQ 771, 773 (Fed.Cir.1985).

[2] Clay argues that the claims at issue were improperly rejected over Hetherington and Sydansk, because Sydansk is nonanalogous art. Whether a reference in the prior art is "analogous" is a fact question. *Panduit Corp. v. Dennison Mfg.*, 810 F.2d 1561, 1568 n. 9, 1 USPQ2d 1593, 1597 n. 9 (Fed.Cir.), *cert. denied*, 481 U.S. 1052, 107 S.Ct. 2187, 95 L.Ed.2d 843 (1987). Thus, we review the Board's decision on this point under the clearly erroneous standard.

[3] Two criteria have evolved for determining whether prior art is analogous: (1)

whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *In re Deminski*, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed.Cir.1986); *In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979).

[4] The Board found Sydansk to be within the field of Clay's endeavor because, as the Examiner stated, "one of ordinary skill in the art would certainly glean from [Sydansk] that the rigid gel as taught therein would have a number of applications within the manipulation of the storage and processing of hydrocarbon liquids ... [and that] the gel as taught in Sydansk would be expected to function in a similar manner as the bladders in the Hetherington patent." These findings are clearly erroneous.

The PTO argues that Sydansk and Clay's inventions are part of a common endeavor—"maximizing withdrawal of petroleum stored in petroleum reservoirs." However, Sydansk cannot be considered to be within Clay's field of endeavor merely because both relate to the petroleum industry. Sydansk teaches the use of a gel in unconfined and irregular volumes within generally underground natural oil-bearing formations to channel flow in a desired direction; Clay teaches the introduction of gel to the confined dead volume of a man-made storage tank. The Sydansk process operates in extreme conditions, with petroleum formation temperatures as high as 115°C and at significant well bore pressures; Clay's process apparently operates at ambient temperature and atmospheric pressure. Clay's field of endeavor is the storage of refined liquid hydrocarbons. The field of endeavor of Sydansk's invention, on the other hand, is the extraction of crude petroleum. The Board clearly erred in considering Sydansk to be within the same field of endeavor as Clay's.

[5] Even though the art disclosed in Sydansk is not within Clay's field of endeavor, the reference may still properly be combined with Hetherington if it is reasonably pertinent to the problem Clay attempts to solve. *In re Wood*, 599 F.2d at 1036, 202 USPQ at 174. A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem. Thus, the purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve. If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection. An inventor may well have been motivated to consider the reference when making his invention. If it is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it.

Sydansk's gel treatment of underground formations functions to fill anomalies<sup>1</sup> so as to improve flow profiles and sweep efficiencies of injection and production fluids through a formation, while Clay's gel functions to displace liquid product from the dead volume of a storage tank. Sydansk is concerned with plugging formation anomalies so that fluid is subsequently diverted by the gel into the formation matrix, thereby forcing bypassed oil contained in the matrix toward a production well. Sydansk is faced with the problem of recovering oil from rock, i.e., from a matrix which is porous, permeable sedimentary rock of a subterranean formation where water has channeled through formation anomalies and bypassed oil present in the matrix. Such a problem is not reasonably pertinent to the particular problem with which Clay was involved—preventing loss of stored

1. Sydansk refers to an anomaly, one of two general region types in an oil-bearing geological formation, as "a volume or void space [e.g., 'streaks, fractures, fracture networks, vugs, solu-

tion channels, caverns, washouts, cavities, etc.] in the formation having very high permeability relative to the matrix [the other region type, consisting of homogeneous porous rock]."

product to tank dead volume while preventing contamination of such product. Moreover, the subterranean formation of Sydansk is not structurally similar to, does not operate under the same temperature and pressure as, and does not function like Clay's storage tanks. *See In re Ellis*, 476 F.2d 1370, 1372, 177 USPQ 526, 527 (CCPA 1973) ("the similarities and differences in structure and function of the invention disclosed in the references ... carry far greater weight [in determining analogy]").

A person having ordinary skill in the art would not reasonably have expected to solve the problem of dead volume in tanks for storing refined petroleum by considering a reference dealing with plugging underground formation anomalies. The Board's finding to the contrary is clearly erroneous. Since Sydansk is non-analogous art, the rejection over Hetherington in view of Sydansk cannot be sustained.

#### CONCLUSION

For the foregoing reasons, the decision of the Board is

REVERSED.



**SURAMERICA de ALEACIONES LAMINADAS, C.A., Conductores de Aluminio del Caroni, C.A., Industria de Conductores Electricos, C.A., and Corporacion Venezolana de Guayana, Plaintiffs-Appellees,**

v.

**The UNITED STATES, United States International Trade Commission and Southwire Company, Defendants-Appellants.**

Nos. 91-1015, 91-1050 and 91-1055.

United States Court of Appeals,  
Federal Circuit.

June 11, 1992.

Rehearing Denied July 8, 1992.

Suggestion for Rehearing In Banc  
Declined July 23, 1992.

Venezuelan producers of electrical conductor aluminum redraw rods commenced

action to contest affirmative antidumping and countervailing duty determinations. The Court of International Trade, R. Kenton Musgrave, J., 746 F.Supp. 139, reversed determinations and vacated orders on ground that determinations were promulgated pursuant to petition that was not supported by majority of industry. Government and petitioner appealed. The Court of Appeals, Plager, Circuit Judge, held that Department of Commerce could reasonably interpret phrase "on behalf of" in Tariff Act provisions governing initiation of countervailing and antidumping duty investigations by petition filed "on behalf of" domestic industry to be satisfied as long as petitioner was an interested party.

Reversed and remanded.

#### 1. Statutes ⇨219(1)

When interpretational gap exists regarding statutory provision, court is to examine whether, in its own interpretation of its responsibilities under act, agency charged with everyday administration of provision applies a permissible construction; court's duty is not to weigh the wisdom of, or to resolve any struggle between, competing views of the public interest but rather to respect legitimate policy choices made by agency in interpreting and applying statute.

#### 2. Customs Duties ⇨21.5(5)

Department of Commerce reasonably interpreted phrase "on behalf of" in statutes governing initiation of countervailing and antidumping duty investigations through filing with administering authority of petition "on behalf of" domestic industry to be satisfied whenever petition was filed by an "interested party"; thus, petitions filed by leading domestic producer of electric conductor aluminum redraw rods were filed "on behalf of" domestic industry notwithstanding opposition from other domestic producers. Tariff Act of 1930, §§ 702(b)(1), 732(b)(1), 771(9)(C); as amended, 19 U.S.C.A. §§ 1671a(b)(1), 1673a(b)(1), 1677(9)(C).

See publication Words and Phrases for other judicial constructions and definitions.